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TAKING FROM THE TAXPAYER:
PUBLIC SUBSIDIES FOR NATURAL RESOURCE DEVELOPMENT

AN INVESTIGATIVE REPORT

MAJORITY STAFF REPORT
OF THE
SUBCOMMITTEE ON
OVERSIGHT AND INVESTIGATIONS
OF THE
COMMITTEE ON
NATURAL RESOURCES
OF THE
U.S. HOUSE OF REPRESENTATIVES

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U.S. House of Representatives
Committee on
Natural Resources
Washington, DC 20515-6201

August 1994

MEMORANDUM OF TRANSMITTAL

COMMITTEE ON NATURAL RESOURCES
U.S. HOUSE OF REPRESENTATIVES
WASHINGTON, DC.

To Members of the
Committee on Natural Resources
of the U.S. House of Representatives

The following Majority Staff Report entitled, "Taking from the Taxpayer: Public Subsidies for Natural Resource Development," is hereby made available to all members of the committee.

Sincerely,

GEORGE MILLER
Chairman

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CHAIRMAN'S SUMMARY

For more than a century, the federal government has encouraged development of natural resources on federal lands. Assistance to natural resource users has expanded from straightforward discounts on prices for timber, water and minerals to include a dizzying array of price supports, tax breaks, low-cost loans and exemptions from environmental laws. This report describes the complex web of overlapping and sometimes contradictory benefits given in each of the principal resource areas, including mineral extraction, irrigation water, hydropower, timber, grazing and recreation.

Despite recent moves toward reform, each of the major natural resource industries still receives a huge number of overlapping supports. Many of these supports do not meet the purposes for which they were intended. Some address needs that no longer exist, like the need to settle the western United States. At times, long-term programs have been adopted to meet temporary problems, or program-wide policies have been adopted to meet the problems of individuals.

Although the extent of subsidies is substantial, this report does not advocate eliminating all supports to natural resource industries. The task of evaluating whether each benefit meets modern imperatives still lies before us. Some subsidies may prove warranted; some may require further refinement to target assistance to those who need it most; some may deserve elimination. To recast natural resources policy for the twenty-first century, however, we must first understand the complex web of federal programs that supports each of the resource industries.

As this report reveals, the federal government is deeply enmeshed in private enterprise involving natural resources. The taxpayers invest an enormous amount of money to increase or protect the value of these private businesses. These investments make the businesses more profitable and increase property values for those who use federal resources in conjunction with their private lands. An understanding of these federal benefits must inform any discussion of the impacts that other federal policies might have on private property values.

The following examples illustrate the range and depth of the federal support given to private natural resource businesses:

- Mining companies can claim and excavate hardrock minerals on public land free of charge. They can also purchase the land itself for $2.50 or $5.00 per acre; in some cases, the federal government has had to purchase the land back at much higher prices. Mineral extractors receive special tax deductions ("depletion allowances" and others), and in some cases benefit from free federal research and development, low-cost federal power, or free federal timber. In addition, they need not reclaim their mines,

meet federal hazardous waste regulations, or report their releases of toxic substances to EPA's Toxic Release Inventory.

- Numerous accounting devices reduce irrigators' price for Bureau of Reclamation water far below the cost of providing it. The irrigators also can obtain low-cost loans to improve their own facilities. They may also receive low-cost farm loans, pest control assistance, and crop subsidies from the Department of Agriculture. They benefit from free navigation improvements to federal waterways. Further, they are exempted from reporting their use of toxic substances to the Toxic Release Inventory, and need not obtain Clean Water Act permits for irrigation drainage pipes that spew pesticides, fertilizers, salts and toxic elements into the nation's waters.
- Timber companies pay for much federal timber at prices below its market value, or below the Forest Service's administrative costs to sell it. They may also receive benefits from the methods used to measure the amount of timber they've purchased. At times they have received contract extensions allowing them to speculate that timber prices will increase, or conversely, favorable contract buy-outs when timber prices decreased. In addition, timber corporations obtain special tax benefits if they reorganize as publicly traded limited partnerships.

Unfortunately, no data is available to show how many resource users take advantage of multiple and overlapping subsidies. Recipients of benefits are not generally required to describe the other programs in which they participate. Neither do the agencies exchange information across programs. In addition, committee staff found it impossible to estimate the total value of the industry supports because the agencies do not maintain records that would permit these calculations.

A review of the overlapping benefits is critical to determining how our natural resource policies work together; this report makes a number of recommendations for such a review:

1) **Federal agencies should review and inventory the programs that provide support for the use of natural resources.** This review must include agencies like the Department of Agriculture and the Internal Revenue Service, which lie outside traditional natural resource fields, but have substantial impacts on resource use. Outside agencies like the Office of Management and Budget, Congressional Budget Office, General Accounting Office, and Congressional Research Service can also contribute to agency and congressional review of these programs.
2) **Once industry supports are identified, they should be reviewed by both the executive and legislative branches to determine whether they serve current public policy purposes.** If they are not serving current purposes, they should be eliminated or targeted to serve those purposes.

Such targeting might involve giving subsidies only to smaller entities, or to those who further other policy goals like water or energy conservation.

3) **Evaluating the full range of natural resource subsidies will assist in eliminating inconsistent policies.** For example, the federal government should not pay subsidies both to reduce the production of surplus crops and to provide water that increases production of the same crops.
4) **Following the recommendation of the recent "National Performance Review," all agencies should obtain a fair return on sales of federal natural resources.** Certain government-wide policies may help ensure a fair return or deter fraudulent practices—sealed bidding and competition among resource purchasers can increase the government's likelihood of receiving fair market value. In addition, the government should adopt a consistent standard for assessing the value of federal lands to commercial enterprises.
5) **Nationwide policies should prevent resource users from taking the value of their subsidies in cash, unless it serves some overriding purpose.** For example, resale of grazing permits or mining claims currently allows commercial interests to take cash profits without actually using the resource. In some cases, resource users have even sold their subsidies back to the federal government at a profit.
6) **Agencies should develop compatible databases and require self-reporting by subsidy recipients to determine the extent to which natural resource users receive multiple federal benefits.** The easiest way to obtain information on overlapping subsidies is to ask those receiving the benefits what other federal programs they participate in. However, the agencies' antiquated and incompatible data processing hardware and software also must be brought into the modern information age.

Federal benefits for natural resource development have contributed jobs and revenues to our economy on a national, regional and local level. They have contributed to our status as a world power and to our domestic energy security. In addition, however, they have created powerful industries with a vested interest in continuing to receive subsidies at the expense of taxpayers and despite economic considerations in the marketplace.

We must recognize the value of supporting our domestic resources industries, but we cannot allow these subsidies to go unexamined. A vigorous review of the depth of support given for use of federal natural resources is essential to moving the U.S. economy into the twenty-first century.

Sincerely,

GEORGE MILLER, *Chairman*

INTRODUCTION

The people of the United States are the nation's largest landowner, holding about 730 million acres of land, rich in natural resources. The federal government administers these lands through the Department of the Interior and other federal agencies. Unlike private landowners, the government has often chosen to pay others to develop natural resources for public policy purposes. Incentives and subsidies for commercial operators initially were simple—giving away land, forgiving interest on loans and waiving royalties. Over the years they have been augmented by an array of benefits that now affect all aspects of commercial development. The tax code, major environmental statutes and industry-specific initiatives contribute to a complex web of assistance for commercial operators using federal resources.

Little consideration has been given to how these multiple and overlapping benefits fit together. Each was developed separately rather than as part of a unified approach to natural resource management. Many land management policies date from another era, and the public policy goals for which they were designed are no longer relevant. Although the country faces new challenges, the government persists in applying nineteenth century principles to twentieth century problems. Urgent overhaul is needed before these same policies persist into the next century as well, resulting not only in degradation of resources, but also in multi-billion dollar losses for the taxpayer.

The Committee on Natural Resources has already initiated reform of natural resource policies. For example, in past years the Congress has enacted reforms of timber management on the Tongass National Forest and water management West-wide and specifically on the Bureau of Reclamation's Garrison Diversion Project, Central Utah Project and Central Valley Project. In this Congress, mining legislation approved by the committee is currently being considered in a House-Senate conference, and the committee recently reported a bill overhauling Department of the Interior policies for awarding concessions in National Parks. Each of the natural resource policies discussed in this report has been subject of committee oversight in recent years.

As part of this debate, the committee staff has reviewed federal policies benefitting commercial operations on public lands. This report puts together pieces of the subsidy jigsaw puzzle by identifying the extent and nature of federal benefits, as well as those who benefit. It also examines how these subsidies overlap, providing some operators with the opportunity for multiple benefits. The committee staff surveyed mineral extraction, grazing, timber and recreation on lands managed primarily by the Department of the Interior

and its agencies.[1] The review also includes commercial activities on lands managed by the Forest Service within the Department of Agriculture.[2] In addition, the report addresses federal resources developed for use on private lands, which include water and power from dams built and operated by the Bureau of Reclamation. A chart showing how some of these subsidies overlap appears at the end of this introduction.

The purpose of this report is to identify the subsidies given natural resource industries rather than to pass judgement on the purposes these subsidies serve. Subsidies sometimes have productive purposes; they promote jobs and growth, and make important contributions to the country's industrial and manufacturing base. However, insufficient consideration has been given to whether the benefits of these subsidies outweigh the costs—a critical factor in the debate over the future of the nation's land management policies.

The committee staff found multiple policies affecting multiple, and frequently overlapping, operations. Many factors complicate the management of multiple resources.

- Federal land managers must juggle competing land use demands; mineral development, grazing and recreational activities often occur in close proximity to one another.
- The same activity on different lands may be supported by different policies; grazing practices on Forest Service land differ from those on BLM land.
- Several agencies sometimes regulate a single activity; outfitters and guides may hold permits from more than one agency for rafting a single river or climbing a single mountain.
- Agency overlap complicates regulation still further; BLM has responsibilities for mineral development on Forest Service lands, NPS and FWS lands.

Each of the programs supporting mining, water, timber and grazing was developed as part of a federal initiative to foster settlement and to encourage permanent communities in the West. All of these policies promoted commercial development through a series of incentives and subsidies. They helped attract people to the West, which has now become one of the fastest growing and most urbanized regions of the country. Although new demands are being placed on federal land, the practice of paying the private sector to develop public resources continues unabated.

- The Mining Law of 1872 attracted miners by giving them title to the land through the patenting process. It also permitted them to extract minerals without paying a royalty to the federal government. This statute still regulates the extraction of some of the nation's most valuable resources,

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[1] The Bureau of Land Management (BLM) manages 270 million acres, the Fish and Wildlife Service (FWS) oversees 91 million acres and the National Park Service (NPS) is responsible for 75.5 million acres. BLM manages an additional 300 million acres where the federal government owns some or all of the subsurface mineral rights.

[2] The Forest Service manages approximately 191 million acres.

including gold, silver, platinum and copper. The 1872 Mining Law originally covered all mineral development; the government later recognized that it was unwise to relinquish control of energy sources and changed the law for all but hardrock minerals. However, in formulating policies to regulate the extraction of oil, gas, coal, sand, gravel and other minerals, the government did not depart from its long-held practice of promoting development through incentives and subsidies. These industries now also receive favorable treatment under the tax code and through exemptions from environmental statutes.

- In the 1900s, the government launched upon a dam-building campaign to bring irrigation water to the West. Without a guaranteed supply of water, some regions could not support permanent, settled communities. Congress funded construction with extraordinarily favorable repayment schedules for the irrigators. Additional benefits have been added so that irrigators holding older contracts with the Bureau of Reclamation pay little or nothing for their water. These same irrigators also benefit through a range of other programs, including Department of Agriculture benefits from Farmers Home Administration loans and crop subsidies.
- As dams for irrigation were constructed, the government recognized that they provided another benefit through their potential to generate power. Because federal hydropower could be sold at rates well below the private power markets, it could be used to provide electrification of the rural West. Power generated by the projects supported local communities who received a preference for power purchases.
- Settlers attracted to the West began to log the vast forests of the Pacific Northwest. The government created the National Forests to avert the fate of eastern forests that had been denuded by unregulated logging. Although the federal government controlled logging, it did so using policies that include subsidies and benefits. For years, the Forest Service has operated a timber program that often provides timber for less than the cost of administering the sales. In addition, abuses have occurred in the appraisal, timber measurement and bidding components of the program.
- When overgrazing threatened to reduce Western rangelands to a dust bowl in the 1930s, Congress responded by regulating grazing on federal lands through the use of permits. Since the government's role was largely regulatory, fees were never set at a level equivalent to the private market. The benefits provided by these permits are now reflected in the increased value of ranches with associated grazing privileges. Other permit holders sublease grazing land at a profit to their neighbors.
- The growth in population in the West has prompted an increased demand for recreation; commercial ventures

> provide extensive recreational opportunities on NPS, Forest Service, FWS and BLM lands. Yet these commercial ventures operate under favorable terms that fail to yield a fair market return.

Participants in the debate over natural resource policies often lose sight of the fact that use of federal land is a privilege. The government permits a variety of commercial ventures on public lands to support broader public purposes. Although contracts allowing these activities may last for several years, the use of federal property *never* becomes a permanent right or an entitlement. A commercial interest that uses land for several years should receive no special prerogatives because of its traditional association with the property. With the exception of lands that pass out of federal possession through sale or exchange, all public lands retain an overriding public ownership.

In 1976, Congress took an important first step in recognizing the value of federal lands and their resources with passage of the Federal Land Policy and Management Act of 1976 (FLPMA).

> The Congress declares that it is the policy of the United States that . . . the United States shall receive fair market value of the use of the public lands and their resources unless otherwise provided for by statute.[3]

Almost twenty years after passage of FLPMA, federal natural resource policies still adhere generally to the tradition of subsidies and benefits. Failure to amend the 1872 Mining Law also contradicts another FLPMA principle requiring that "the public lands be retained in Federal ownership."[4] Land leaves public ownership every time a patent application is approved.

The current fiscal crisis adds greater urgency to an overhaul of current natural resource policies. Formerly, the government could afford to subsidize commercial activities that benefitted the country in other ways. But the federal deficit compels a fresh examination of natural resource-related outlays to ensure that federal assistance for commercial activities serves a worthwhile public purpose.

The term "subsidy" is used broadly in this report to include a number of different federal actions. It should not be viewed as having a technical definition but rather as a term to describe a variety of federal actions that affect all aspects of commercial development. This report discusses several types of federal policies that benefit commercial operators including:

- Free use of resources and direct payments to operators;
- Royalty forgiveness schemes or artificially low royalty rates;
- Sale or lease of property, resources or services at below-market rates;
- Favorable treatment for operators under the tax code;

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[3] 43 U.S.C. §1701(a).

[4] 43 U.S.C. §1701(a)(1).

- Prices that yield insufficient revenue to cover the costs of the programs;
- Site-specific benefits for certain operators;
- Failure to inspect and enforce existing regulations;
- Exemptions from environmental statutes;
- Federally funded research and development; and
- Additional subsidies from other agencies.

This report does not attempt to place a total dollar figure on the value of these subsidies. The value of individual benefits is provided when available; in instances where there is more than one estimate, the range is given. Several factors present problems in any attempt to value federal assistance for natural resource users.

a) Identifying subsidies and benefits often proved difficult. They are found in an array of federal statutes ranging from environmental to tax legislation. At times they are incorporated into annual appropriations bills, and have not been debated at public hearings held by authorizing committees.
b) Frequently, the government has little or no information about the about the resources that it has given away. Hardrock miners have never been required to report the total value of minerals mined on either federal or patented land. With the exception of the National Park Service, agencies have not monitored non-mining uses of patented land. Similarly, BLM has not attempted to track prices charged for subleasing by holders of grazing permits.
c) Determining the value of a subsidy presents particular problems, since most involve revenue lost to the federal government. For example, timber sales do not yield a fair market return to the government. However, without the use of sealed bids or more accurate appraisal methods it is difficult to ascertain the value of the differential. The subsidy may change, especially if it involves a buy-back by the federal government. In these cases, the price is often inflated well beyond the original cost of the resource.

Equally difficult to answer is the question of who benefits from the subsidy. Inadequate data, differing natural resource policies, and the absence of government-wide standards contribute to the complexity of the answer. Identification of recipients of multiple benefits proved virtually impossible.

a) Many agencies have no records of who benefits from federal subsidies. The Bureau of Reclamation has no means of identifying which lands actually receive irrigation water once it is transferred to an irrigation district, and therefore does not know whether water is being applied outside the authorized water service area. Similarly, BLM does not know what activities are occurring on mine claims of five acres or less, for which it does not require plans of operation.

b) Recreation permits and grazing permits may provide the subsidy only to the first holder, who realizes the value of the subsidy by recovering a higher price upon sale of a recreation business or of a ranch associated with a grazing allotment.
c) The absence of government-wide standards for managing natural resource development complicates the identification of beneficiaries further. The committee staff found little contact either between or within the agencies. Databases are incompatible and often antiquated; even relatively simple requests proved difficult to fill.
d) Agencies have no procedures to identify the recipients of multiple benefits. Thus, for example, the agencies cannot identify farmers who use federal irrigation water who may also receive federally-subsidized power, loans from the Farmers Home Administration, or an array of benefits from Department of Agriculture crop programs.

Although this report advocates re-examination of natural resource subsidies, it does not advocate their complete elimination. Subsidies can contribute to community stability and help provide jobs. They can also promote the efficient use of natural resources. For example, reduced royalty rates promote production from declining offshore wells that might otherwise be closed, resulting in the loss of valuable domestic oil and gas reserves.

Congress has long recognized the value of federal assistance, be it for the poor, inner-city child, or for commercial development of natural resources. But social welfare programs are designed to reach those most in need. Most natural resource programs benefit all, regardless of need. Beneficiaries range from multinational corporations to lone operators. Where the intent of subsidy programs is to support smaller operators or local communities, Congress might consider targeting federal assistance for natural resource activities by applying the same principle already present in numerous other federal programs including Medicaid, Aid to Families with Dependent Children, the Women, Infants and Children Program, Supplemental Security Income and public and assisted housing.

Congress might also consider requiring commercial operators to meet minimum environmental standards or other public policy goals before they could qualify for federal assistance. In some cases, resource users are exempted from generally applicable environmental laws, and these exemptions might be withdrawn from recipients of federal largesse. In other cases, public policy goals like water or energy conservation could be adopted, exceeding the requirements of generally applicable laws. Such conditions on receipt of benefits would shift responsibility for those benefits onto the recipient and provide an incentive for responsible use of the resource.

Targeting subsidies might be achieved by combining all government transfer programs—be they subsidies to commercial users or income transfers to individuals—and treating them as income. The effect would be progressive since the value of transfers to individuals would probably fall below the cap for taxation, while those to commercial users would almost certainly be taxable. Such a solution would, however, require that the tax code not become the vehicle for the subsidy.

Another general question raised by this report is the role of the agencies in implementing natural resource policies. At present, there is little communication between revenue raisers and revenue spenders, and agencies often duplicate functions. One such example is provided by the Bureau of Mines: the Congressional Budget Office has evaluated the budget impact of abolishing the agency because its mission has been fulfilled by other federal departments.[5]

Years of promoting commercial development have had additional impacts on the agencies. Instead of representing the taxpayer, they often represent commercial interests more effectively. This reaction reflects a focus on the original purposes of the federal programs, which were intended to promote the commercial use of resources. Federal assistance for commercial activities has even included the creation of agencies devoted to serving the needs of industry; agencies like the Bureau of Mines and the Bureau of Reclamation were established for the sole purpose of encouraging resource development.

Federally-funded research and development (R&D) provides another illustration of the government's close association with commercial interests. While the government has a responsibility to promote R&D, industry should not assume that it will benefit from federal technological advances free of charge. For example, the Bureau of Mines pioneered several extraction processes employed by industry, including the cyanide heap leach technology now being used to remove millions of pounds of gold on the Carlin Trend in Nevada.

During consideration of the Environmental Technologies Act of 1994, Congressman Robert Walker offered an amendment requiring that companies repay the financial assistance awarded if their product is "marketed or used."

> Above all, [the Environmental Technologies Act] is another example of the committee's love affair with government-driven industrial policy. I am beginning to think its proponents won't be happy until *every* government department and agency and *every* sector of the economy has its very own give-away program.[6]

The same analysis might usefully be extended to federally funded R&D that benefits natural resource industries.

In addition to the major subsidy programs mentioned here, numerous other federal policies distort natural resource use.

- Federal lands are leased for a variety of other less resource-intensive enterprises on federal land. These range from rights of way, apiaries and communication sites to target ranges and permits for the filming of movies and commercials.

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[5] Congressional Budget Office, "Reducing the Deficit: Spending and Revenue Options," A Report to the Senate and House Committees on the Budget, March 1994.

[6] "Environmental Technologies Act of 1994," Hearing and Markups before the Subcommittee on Technology, Environment and Aviation, Committee on Science, Space, and Technology, U.S. House of Representatives, 103d Congress, 2d Session, No. 101, February 22, 1994, at p. 362.

- Minor provisions of various laws provide subsidies that can be difficult to identify. This report discusses only a few of the more obscure benefits, including a provision of the 1955 Resources Act, which gives mining claim holders the right to free timber for mine construction on claims where the timber has already been disposed of. Certain subsidies may be found deep in appropriations bills. One such benefit was provided for irrigators in a rider to the 1943 Interior appropriations bill, which capped the repayment required from the W.C. Austin project in Oklahoma at $3,080,000, saving the irrigators more than $8,000,000.
- Some subsidies derive from policies that are not exclusive to natural resource industries. For example, the Occupational Safety and Health Administration does not conduct scheduled inspections at businesses with ten or fewer employees having serious injury rates below the national average. The Department of State and the Department of Commerce fund programs to promote U.S. business abroad. The Overseas Private Investment Corporation encourages investment in developing countries by U.S. companies. All of these programs provide further incentives for natural resources development.
- Other subsidies result from policies that affect federal natural resource policies only incidentally. For example, Congress in 1986 passed a special tax provision for Alaska Native corporations, allowing them to sell net operating losses to corporations that could then deduct the losses from their federal taxes. Although intended to provide only $50 million in benefits for a few bankrupt Native corporations, the provision instead provided an incentive for the 12 regional and many of the 200 village Native corporations to create paper losses by selling or transferring assets, including natural resource assets. Before its repeal in 1988, this tax provision cost hundreds of millions of dollars in potential tax revenue and facilitated extensive clearcutting of old-growth timber on Native lands in Southeast Alaska, Prince William Sound and other coastal Alaska areas.

Subsidies that do not benefit a commercial activity directly are beyond the scope of this report. For example, entry fees charged to National Parks and other public lands for recreation may not reflect current fair market values, thus providing private users with a subsidy. Although this issue is not discussed in this report, it may soon be subject to administrative changes in the fee system to reduce the subsidy.

Still other subsidies merit separate reports of their own. The nuclear industry—one of the most heavily subsidized commercial operations in the country—falls into this category. The industry owes its very existence to federally backed research; the government has also granted it limited indemnity from accidents under the Price-Anderson Act. Estimates of the

total federal subsidy range between $832 million and $2.75 billion for 1989,[7] to $3.05 billion for 1991.[8] The nuclear industry receives a further subsidy in decommissioning costs. If funds accrued for decommissioning prove insufficient, the remaining costs will be borne by the taxpayer.

Neither did committee staff attempt a discussion of natural resource policies on Indian lands, which also merit an independent review. Generally, the federal government has advocated policies to develop Indian resources that include many of the same benefits to resource industries as those included in policies for federal lands. On Indian lands, these policies often deprive the tribes of revenue or enable the operator to pursue environmentally damaging commercial activities at lower cost. For example, Peabody Coal, which operates the Black Mesa mine in northeastern Arizona, pumps about a billion gallons of groundwater annually from the Hopi reservation to slurry pulverized coal. The Hopi face an acute water shortage. The price for water would be higher from any other source; this is demonstrated by Peabody's proposal to replace pumping with water delivered by pipeline from Lake Powell. Pipeline construction would add between 1 and 6 cents to ratepayer monthly electric bills.

A third area to which this report does not devote detailed discussion is the question of land transfers and exchanges. These invariably provide significant benefits to the private landholder involved, and have often proven a major revenue-loser to the federal government. For example, in the early 1980s the Department of the Interior transferred by exchange 92,160 acres of subsurface rights within the Arctic National Wildlife Refuge (ANWR) to an Alaska Native corporation in return for 101,272 acres of corporation property. The General Accounting Office (GAO) found that the corporation's land was worth only $5.9 million while the oil and gas interests conveyed to the Native corporation were valued at $395.5 million. Moreover, other generous exchange terms included the right to drill the only exploratory oil and gas well in the environmentally important ANWR coastal plain, without having to share the test well data with the federal government.[9] A similar scheme—dubbed the "megatrade"—to convey by exchange $539 million of additional ANWR oil and gas rights to six groups of Native corporations (and their oil company partners) was condemned by GAO and thwarted by Congressional action in 1988.[10]

Any discussion of natural resource policies is complicated by the varying ownership of public lands in the United States. Most federal lands came from

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[7] Douglas N. Koplow, "Federal Energy Subsidies: Energy, Environmental, and Fiscal Impacts," The Alliance to Save Energy, Lexington, Massachusetts, April 1993, at p. 13.

[8] Energy Information Administration, "Federal Energy Subsidies: Direct and Indirect Interventions in Energy Markets," SR/EMEU/92-02, November 1992, at pp. 72 and 78.

[9] General Accounting Office, Report to the Chairman, Subcommittee on Water and Power Resources, Committee on Interior and Insular Affairs, "Chandler Lake Exchange Not in the Government's Best Interest," GAO/RCED-90-5, October 1989.

[10] General Accounting Office, Report to the Chairman, Subcommittee on Water and Power Resources, Committee on Natural Resources, "Consideration of Proposed Alaska Land Exchanges Should Be Discontinued," GAO/RCED-88-179, September 1988. Section 201 of the Alaska Submerged Lands Act, Public Law No. 100-395, 102 Stat. 979, August 18, 1988, prohibits the Secretary of the Interior from conveying oil and gas rights or other interests in lands within the coastal plain of ANWR without the approval of Congress.

other countries through purchase or conquest as the United States expanded. Known as public domain lands, they are found primarily in the West and in Alaska. In the eastern United States, public land is primarily "acquired land," i.e., lands that were purchased by the federal government from private owners. In some cases, ownership of the mineral estate is separate from surface ownership, with the federal government owning either one or the other.

The information contained herein comes from a number of cited sources, plus hours of briefings by staff from Department of the Interior agencies, and several Department of Agriculture programs including the Forest Service, as well as staff from the Office of the U.S. Trade Representative, the Internal Revenue Service and the Department of Labor. Committee staff also met with analysts from the General Accounting Office, the Congressional Research Service and the Congressional Budget Office. A wide variety of written sources were used in this survey, including Inspector General reports, press articles and independent studies.

The purpose of this report is not to provide a definitive course for the future of natural resource policies in the United States. Rather, it is to move the debate forward by examining the role of subsidies in natural resource policies, and the goals they serve. In *Crossing the Next Meridian*,[11] Charles Wilkinson summarizes the value of federal assistance, "The real objection . . . ought not be to subsidies generally, but to irrational or unexamined subsidies."

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[11] Charles F. Wilkinson, *Crossing the Next Meridian; Land, Water, and the Future of the West*, Island Press, 1992, at p. 19.

*Overlapping Subsidies**

SUBSIDY	SUBSIDIZED OPERATION							
	Minerals			Irrigation	Hydropower	Timber	Grazing	Recreation
	Locatable	Leasable	Salable					
Free use of resources and direct payments to operators	X			X				
Royalty forgiveness schemes or artificially low royalty rates		X						
Sale or lease of property, resources or services at below market rates	X	X	X	X	X	X	X	X
Favorable treatment for operators under the tax code	X	X	X			X		
Prices that yield insufficient revenue to cover costs of program	X		?	X	X	X	X	?
Site-specific benefits for certain operators	?	X		X	X	X		X
Failure to inspect and enforce existing regulations	?	X	X	X		X	X	X
Exemptions from environmental statutes	X	X	X	X				
Federally funded research and development	X	X		X		X	?	?
Additional subsidies from other agencies	X	X	X	X	X		X	

**This table is not exhaustive; it represents only the range of subsidies touched on in this report.*

MINERALS

The United States' considerable mineral wealth has made an important contribution to the nation's development. In the West, hardrock minerals attracted settlers hoping to make their fortune; in the East, rich seams of coal fueled the industrial revolution. Oil and gas reserves gave the nation a reliable source of energy, which the government still counts on to reduce dependence on imported oil. Historically, federal policies have recognized the significance of these natural resources and promoted extraction through a range of incentives and subsidies.

But commercial production of minerals also has come at a great cost to the environment. Mining regions are strewn with abandoned mine sites and acid mine run-off has contaminated groundwater and rivers. Current operations continue to pollute the landscape. The U.S. Bureau of Mines summarized the impacts of mining:

> Any intensive use of the earth's resources carries with it the potential for adverse environmental consequences. Mining is no exception. *Almost 50 billion tons of old mining and mineral processing wastes lie scattered about the United States*. In the United States, mining adversely affects over 12,000 miles of rivers and streams and over 180,000 acres of lakes and reservoirs today.[12]

Oil and gas development also has had adverse environmental impacts. Many thousands of wells may have been closed improperly, posing potential threats from brine seepage. Some drilling sites already have been seriously contaminated by mercury from leaky manometers.

Congress regulates the development of minerals according to three broad categories: locatables, leasables and salables. The primary agency for implementing extraction policies is the Bureau of Land Management (BLM), which manages 270 million acres within its immediate jurisdiction and also has responsibilities on Forest Service, National Park Service, Fish and Wildlife Service and Indian lands. In addition, BLM administers leasing on private lands where the federal government retains the mineral rights. Incentives for commercial activity vary according to the type of mineral, but may affect all aspects of development, creating a pattern of multiple and overlapping benefits.

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[12] "RCRA Special Waste," Hearing before the Subcommittee on Transportation and Hazardous Materials, Committee on Energy and Commerce, House of Representatives, Serial No. 102-69, September 12, 1991, at p. 121 (quoted in statement of Philip M. Hocker) (emphasis added).

WHAT ARE THE BENEFITS?

Locatables

"Locatables"[13] is the term given to hardrock minerals including metals such as copper, gold, silver, lead, zinc and magnesium. The primary statute regulating the extraction of hardrock minerals is the Mining Law of 1872, which applies to public domain lands in the West.

The 1872 Mining Law provides perhaps the most generous range of subsidies and benefits of any described in this report. A unique feature of the law is the transfer of land at below-market price to private ownership. The 1872 law denies the government the opportunity to collect royalties at any stage of the production process. Neither does it require any kind of reclamation; since the law was passed miners have abandoned mines routinely.

THE LAND

The 1872 Mining Law gives any United States citizen or business the right to prospect on federal land free of charge without a permit or license.[14] A prospector who identifies a valuable mineral deposit can stake a claim, which is generally about 20 acres in size. A claim gives the prospector the right to mine and to sell minerals from the claim. The claim expires only when the mine is closed or when it is abandoned by the claimant.

According to BLM there are currently about 330,000 active mining claims on federal lands. The 1872 Mining Law places no restrictions on the resale of claims on the open market, and the government does not share in any resale profits. In 1987 American Barrick Resources purchased 1,949 acres in claims at the Goldstrike Mine in Elko, Nevada for $62 million. Although the claims lay on public land, the government did not benefit from this sale. The claim will prove quite profitable to American Barrick, as described below. Claim holders are required to report transfers.

To retain the claim, the 1872 law required the holder to complete at least $100 worth of development-related work on it annually. In 1992, Congress replaced the work requirement with a $100 annual rental fee, increasing to $200 in FY94.[15] Beginning in August 1994, a $25 fee will also be charged for recording and holding mining claims. The Congressional Budget Office estimated that increasing the holding fee to $1,000 per claim (roughly the

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[13] "The term 'locatable mineral' means any mineral, the legal and beneficial title to which remains in the United States and is not subject to disposition under any of the following:
"(i) The Mineral Leasing Act (30 U.S.C. 181 and following).
"(ii) The Geothermal Steam Act of 1970 (30 U.S.C. 1001 and following).
"(iii) The Act of July 31, 1947 commonly known as the Materials Act of 1947 (30 U.S.C. 601 and following).
"(iv) The Mineral Leasing for Acquired Lands Act (30 U.S.C. 351 and following)." Section 3(11)(A) of Mineral Exploration and Development Act of 1993 (as reported by Committee on Natural Resources), H.R. Rpt. No. 103-338, 103d Congress, 1st Session, November 9, 1993.

[14] Since any U.S. entity may participate, this gives U.S. subsidiaries of foreign corporations the right to prospect on public land.

[15] The General Accounting Office found that neither BLM nor the Forest Service could verify the work requirement. General Accounting Office, Report to the Chairman, Subcommittee on Mining and Natural Resources, Committee on Interior and Insular Affairs, House of Representatives, "Federal Land Management: The Mining Law of 1872 Needs Revision," GAO/RCED-89-72, March 1989 (hereinafter cited as "Mining Law Needs Revision").

equivalent of $100 in 1872) would produce about $75 million per year in new revenue for the federal government.[16]

The claim holder may acquire title to the land and the mineral rights through the patenting process. The claimant must prove "discovery" by showing that the mineral deposit is economic to mine and demonstrate that at least $500 has been spent developing the claim. The government receives $250 for the first patent application and $50 for subsequent applications. The claimant may then purchase the land for $2.50 or $5.00 per acre, depending on the type of claim. The law places no limits on the number of claims or patents per person.

Once the patent is approved, the land becomes private property. The federal government collects no further revenue from the land regardless of the multi-billion dollar value of resources it may yield. Since 1872, about 3.2 million acres of federal land has been patented. Many of these lands have contained considerable mineral wealth. Between January 1, 1978 and September 30, 1987, BLM approved patents covering approximately 66,000 acres for hardrock mineral claims.[17] As of March 10, 1994 there were 612 pending mineral patent applications.

- In May 1994, Interior Secretary Bruce Babbitt approved under court order a patent application for 1,949 acres at Goldstrike Mine by Canadian-owned American Barrick Resources in Elko, Nevada. American Barrick had purchased the claims in 1987 for $62 million, but was able to buy the land itself from the federal government for $9,765. The mine is estimated to hold 30 million ounces of gold. At the time of the sale, gold was valued at $380 per ounce. Barrick will mine approximately $10 billion worth of gold and pay no royalty.
- In 1992, the Homestake Mining Company patented almost 62 acres of federal land for $310 in Sonoma County, California. The McLaughlin Mine, which is located on the property, had gold reserves of 1.8 million ounces in 1993, when the price of gold was $359 per ounce.

The introduction of mining reform legislation in Congress in recent years has prompted mining claimants to increase submission of patent applications. At the end of FY91, applications in California had increased 50%, and 63 applications covering more than 16,000 acres were pending in Nevada.[18] At first, BLM responded to reform proposals by fast-tracking the patent process. This practice has now ceased.

According to GAO, "The patent fees of $2.50 and $5.00 per acres closely approximated the fair market value of western grazing and farm land

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[16] Congressional Budget Office, "Reducing the Deficit: Spending and Revenue Options," A Report to the Senate and House Committees on the Budget, March 1988.

[17] "Mining Law Needs Revision," at p. 12.

[18] "Mineral Exploration and Development Act of 1993," H.R. Rpt. No. 103-338, 103d Congress, 1st Session, November 9, 1993.

in 1872."[19] The agency reviewed 20 patents issued since 1970 and found that the government received less than $4,500 for land worth between $13.9 million and $47.9 million. Although the claimant must show discovery of minerals in the patenting process, the successful patent applicant is not required by law to mine the deposit. In many cases, the land has proved more valuable for other purposes. The government is not required to keep records of non-mining uses, but one agency official summarized the situation by saying, "Any land use you can think of has taken place out there." Examples of non-mining uses of patented lands include:

- In 1983 in Keystone, Colorado, 160 acres of land near the resort ski runs were patented for a total of $400 for gold mining. According to the Forest Service, no gold has been mined. In 1989, 44 acres of the land was being offered for development at about $11,000 per acre. Patented land has been used to develop tourist attractions at the Colorado ski resorts of Breckenridge, Aspen and Telluride, and at Park City, Utah.
- In 1991, a developer in Santa Clarita Valley, California patented five acres of land for $100. Surrounding property owners were asking between $75,000 and $100,000 per acre.[20]
- In 1970 Phoenix, Arizona, businessman Frank Melluzzo patented 61 acres of land for $153.50. In 1980, he sold the land to a developer for $400,000 plus an 11% share in future profits. The luxury Pointe Hilton hotel now stands on what was once public land; Melluzzo estimates that his share of the resort is worth about $6 million.

NPS reported that as of March 2, 1994 there were 732 patented claims totalling 21,000 acres within the National Park system. Many are not used for mining. In Denali National Park and Preserve, commercial cabins and a tourist lodge have been built on patented land. A Japanese consortium has expressed interest in building a hotel on patented land on Mt. McKinley. At Lake Mead National Recreation Area, the Gold Strike Casino and Hotel are built on patented land and the facility may soon be expanded. In the Yukon-Charley Rivers National Preserve in Alaska, a developer has submitted a proposal to build a recreational resort and a micro-brewery on patented land.

In some instances, the federal government has bought back claims after selling them for a pittance under the 1872 law. When Congress announced the selection of Yucca Mountain for a nuclear waste disposal site, Anthony Perchetti staked claims to land at the proposed site. Rather than fighting him in court, the Department of Energy opted to pay $249,000 for return of the land. The Memmott family in Utah hoped for similar success when land in Tooele County was under consideration as the site of the now-defunct supercollider. Before BLM could withdraw 400,000 acres, the Memmotts

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[19] "Mining Law Needs Revision," at p. 11.

[20] Warren Olney, "Psst, Wanna Buy 5 Acres for $100?" *Los Angeles Times*, January 7, 1993.

had staked over one thousand claims covering about 200,000 acres of the land designated for withdrawal. Texas became the site of the supercollider project, BLM showed that the claims had no valuable mineral deposits, and the Memmotts let them lapse.

In other cases the federal government has exchanged public land for patented land. This has occurred particularly where patented land has been used in a manner that interferes with the management of surrounding federal property. For example, in Colorado's West Elk Wilderness, developer Tom Chapman began construction of a luxurious log cabin on a 140-acre inholding. Originally patented land, Chapman purchased the land for $960,000 in 1992. The inholding is 6 miles from the nearest road, so Chapman brought in all materials by helicopter. After extensive negotiations with the Forest Service, Chapman agreed to an exchange for 105 acres of federal land near the Telluride ski resort.

THE MINERAL

The extractive industry gains its greatest subsidy from federal failure to collect a royalty on hardrock minerals mined on federal or lands that have been patented and therefore become private property. A recent report by the Mineral Policy Center estimates that $231 billion worth of minerals has been mined on both patented and public land since 1872. In 1993 dollars, these minerals would be worth approximately $472 billion.[21]

Mining reform proposals have prompted several organizations to calculate the value of hardrock mineral production on federal land. According to BLM, $1.81 billion worth of locatable minerals was mined on federal lands in 1991. GAO calculated that in 1990 $1.2 billion worth of eight hardrock minerals was mined in the 12 western states where 90% of all federal lands are located.[22] This may, however, be an underestimate.[23] Using these figures, the Congressional Budget Office estimated that an 8% royalty on hardrock minerals mined on federal land would raise $80 million annually.[24]

A National Wildlife Federation (NWF) survey concluded that the annual value of mined hardrock minerals on federal land was significantly higher, at $3.6 billion. NWF based its findings on an informal survey of BLM, Forest Service and state officials. A December 1992 report by the Committee on Government Operations put the value of minerals mined annually on federal lands at $4 billion.[25]

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[21] Thomas J. Hilliard, "Golden Patents, Empty Pockets," Mineral Policy Center, Washington, DC, June 1994.

[22] The states are Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. General Accounting Office, Report to the Honorable Dale Bumpers, U.S. Senate, "Mineral Resources; Value of Hardrock Minerals Extracted From and Remaining on Federal Lands," GAO/RCED-92-192, August 1992.

[23] Only 282 of the 352 hardrock mining operators responded to the GAO questionnaire, and GAO did not verify the accuracy of the information received. The survey did not include the Stillwater mine in Montana, with platinum and palladium deposits worth $3.4 billion.

[24] Congressional Budget Office, "Reducing the Deficit: Spending and Revenue Options," A Report to the Senate and House Committees on the Budget, February 1993.

[25] "Managing the Federal Government: A Decade of Decline," Majority Staff Report, (continued...)

Estimating the value of minerals produced on patented, formerly public, land is even more difficult. The Bureau of Mines collects and publishes hardrock mineral production data, but does not gather information on land ownership. Although the patent applicant must show that the mineral deposit is economic to mine at the time of the patent, the applicant need not report the estimated value of the total deposit.

A 1991 report, "Private Profits from Public Lands,"[26] examined the value of minerals produced by 34 large western mining operations. The report estimated that at least $3.4 billion of 1989 production was from patented and $0.9 billion was from unpatented mining claims. The report also estimated gross profits for 25 mines, which totalled $2.1 billion. Net profit for 27 mines totalled $967 million.

The value of unmined mineral deposits is also uncertain. GAO estimated that, based on 1990 values, about $64.9 billion in mineral reserves remained on federal lands at the end of 1990.[27] The Mineral Policy Center report "Golden Patents, Empty Pockets" estimates that minerals from pending patents will be worth more than $34 billion to the new owners. Recent examples illustrate that mining companies continue to find valuable mineral deposits on federal land:

- The Jerritt Canyon Mine in Nevada's Carlin Trend has gold deposits worth more than $1 billion. Independence Mining Company (a subsidiary of the South African Anglo-American Corporation) is currently applying to patent the land.
- In southeastern Arizona, the Arizona Mining Company is seeking to patent land in the Coronado National Forest. Its Sanchez Mine is estimated to have deposits of 550,000 tons of copper, worth about $1 billion at today's prices.
- Stillwater Mining Company, owned by Manville Corporation and Chevron, is applying to patent land in Montana that has deposits of platinum and palladium worth about $3.4 billion. It is the only mine in the world currently extracting platinum and palladium as its primary commodities.[28]

Encouraged by American Barrick's recent success in patenting its Goldstrike mine, many other mining companies are now turning to the courts to hasten the process. As part of the Department of Interior appropriations bill,

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[25](...continued)
Committee on Government Operations, 102d Congress, 2d Session, December 1992 (hereinafter cited as "Decade of Decline"), at p. 190.

[26] Jonathan G. Dushoff, "Private Profits from Public Lands; The Case of Hardrock Mining," Studies in Public Policy, Taxpayer Assets Project, P.O. Box 19367, Washington DC 20036, 202-387-8030, August 1991.

[27] General Accounting Office, Report to the Honorable Dale Bumpers, U.S. Senate, "Mineral Resources: Value of Hardrock Minerals Extracted From and Remaining on Federal Lands," GAO/RCED-92-192, August 1992.

[28] Thomas J. Hilliard, "Golden Patents, Empty Pockets," Mineral Policy Center, Washington, DC, June 1994.

however, the House of Representatives recently approved a one-year moratorium on the issuance of hard-rock mining patents.

ABSENCE OF ENVIRONMENTAL REGULATION

Historically, the hardrock mining industry has been relieved of the costs of mine clean-up, because the 1872 Mining Law contains no reclamation provisions. Although most states now require reclamation, lasting and costly damage has already been done.[29] The federal government must now meet many of these clean-up costs. According to the Mineral Policy Center, there are 557,650 abandoned hardrock mine sites nationwide; costs of clean-up range between $32.7 billion and $71.5 billion.[30]

Congress set up the Superfund program in FY81 to clean up acutely contaminated sites, including abandoned mines. The program has been funded through industry taxes and federal appropriations, thereby creating an intra-industry subsidy in addition to federal support. The government has also expended considerable resources litigating Superfund cases to compel responsible parties to pay for clean-up. There are approximately 60 abandoned mine sites now on the National Priorities List (NPL).

Clean-up is not confined to old mine sites. The hardrock mining industry has been spared high costs of reclamation at a number of modern mine sites, particularly in those states where cyanide heap-leaching is permitted. Although the Superfund program funds clean-up at many abandoned mines, the sites must pose a significant danger before qualifying for Superfund money.

- The State of Montana is suing the Zortman-Landusky gold mine for more than 20 violations of the federal Clean Water Act. The mine is primarily on BLM land and borders the Belknap Indian reservation where hunting and fishing have been adversely affected by acid mine drainage. Pegasus Gold, Inc., the parent company, argued that it should be excused from the lawsuit since it was not responsible for the actions of its subsidiary, Zortman Mining, Inc. The judge ruled against the company, and the state appears to be moving toward an out-of-court settlement.
- At the Bunker Hill silver mine in Idaho, lead levels are more than 30 times higher than the maximum "safe" level designated by EPA. Local children have elevated lead levels in their blood. Bunker Hill is now on the NPL, and EPA estimates that clean-up will cost between $5 and $10 million.
- The Kennecott Bingham Canyon mine in Utah has contaminated 200 square miles outside Salt Lake City. EPA is considering it for inclusion on the NPL as two sites. Remediation will cost between $200 and $400 million.

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[29] The requirement of the Federal Land Policy Management Act of 1976, that agencies prevent undue degradation of the land, has not provided an enforceable federal standard.

[30] James S. Lyon, Thomas J. Hilliard, Thomas N. Bethell, "Burden of Gilt; The legacy of environmental damage from abandoned mines, and what America should do about it," Mineral Policy Center, Washington DC, June 1993.

- The Clark Fork mine near Butte, Montana is now four contiguous Superfund sites, which will cost $1 billion dollars to clean-up. BLM's liability will amount to $100-$300 million.[31]

The 1872 Mining Law provides the hardrock mining industry with yet another benefit through the extraordinary access it gives companies to the nation's public lands, despite ecological concerns. For example, Canada's Noranda Resources Corporation hopes to build the New World Mine on Forest Service land less than three miles from Yellowstone National Park. Both EPA and the Park Service oppose the mine. If the patents are approved, the federal government will have little control over the mine's operation, which could adversely affect the Yellowstone ecosystem.

The patenting process also enables companies to acquire land for use as "millsites." Originally intended for mills, smelters or other processing facilities, land that passes into private ownership through millsite patent applications is often used instead for waste dumping. The operator benefits because the use of the land would otherwise have required a federal permit, subjecting it to federal land use standards.

OTHER BENEFITS

Numerous other forms of assistance are provided to the hardrock mining industry. While this report does not attempt an exhaustive survey, three examples of industry supports illustrate the variety of subsidies.

- The extractive industry formerly believed that low grade ore on the Carlin Trend in Northern Nevada could not be mined profitably. However, cyanide heap leaching technology pioneered by the Bureau of Mines some twenty years ago has helped make this region the site of a modern gold rush. Several mine companies have applied for patents on the Carlin Trend: American Barrick's patent has been approved; pending applications in Nevada will give private owners the right to mine mineral deposits worth more than $16.5 billion.[32]
- In Oregon, the Glenbrook Nickel Smelter benefits from very low cost power provided by Bonneville Power Administration (BPA).[33] A provision of the Pacific Northwest Electric Power Planning and Conservation Act gave the BPA Administrator the authority to establish a special rate to "a direct service industrial customer using

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[31] A fuller discussion of the federal liability from abandoned mine sites can be found in a 1993 report issued by the Committee on Natural Resources, "Deep Pockets: Taxpayer Liability for Environmental Contamination," Majority Staff Report, Subcommittee on Oversight and Investigations, Committee on Natural Resources, House of Representatives, 103d Congress, 1st Session, Committee Print No. 2, July 1993 (hereinafter cited as "Deep Pockets").

[32] Thomas J. Hilliard, "Gold Patents, Empty Pockets," Mineral Policy Center, Washington, DC, June 1994.

[33] See the section below on Hydropower for a full discussion of this issue.

raw minerals indigenous to the region as its primary source."[34]

- Mining claim holders receive an obscure benefit under Section 4 of the 1955 Surface Resources Act. The federal government must provide free timber to claim holders who require it for mine construction on claims where federal timber was sold before the claim was staked.

Leasables

Leasable minerals include oil, gas, coal, and geothermal energy as well as sodium and fertilizer minerals. Most non-fuel minerals are leasable, including asbestos, gypsum, phosphate and sulfur. On acquired lands,[35] hardrock minerals are also treated as leasables. Policies regulating extraction of oil and gas, coal and non-fuel leasables are discussed separately below.

OIL AND GAS

Originally, oil and gas development was governed by the Mining Law of 1872. In response to the desire to keep defense-related minerals—including oil and gas—in federal ownership, Congress approved the Mineral Lands Leasing Act of 1920, which designated oil and gas as "leasables."

Onshore oil and gas leasing is administered by the BLM in accordance with the Federal Onshore Oil and Gas Leasing Reform Act (FOOGLRA) of 1987. In 1993, the agency estimated that wells on federal lands produced 126.7 million barrels of oil and 1.709 trillion cubic feet of gas. In 1992, oil production from onshore and offshore federal leases accounted for 18.6% of all U.S. production. Gas production from federal leases provided 32.1% of total production.

At present there are approximately 58,000 federal oil and gas leases, of which about 19,000 are currently producing. BLM receives bonus bids for leases auctioned competitively, and collects rents on wells that are not producing. The Minerals Management Service (MMS) collects and disburses royalties on all leases. In FY92 revenue from onshore oil and gas leases totalled $524 million.

Offshore oil and gas leases are administered by MMS in accordance with the Outer Continental Shelf Lands Act Amendments (OCSLAA) of 1978. As with onshore drilling, leasing is competitive, with bonus bids offered by interested parties. MMS also collects and distributes royalties from oil and gas drilled offshore. There are currently 5,837 leases in the Gulf of Mexico, the Atlantic and Pacific Oceans, and off the coast of Alaska. In FY92 royalties from offshore oil and gas totalled $2.3 billion.

Competitive leasing and royalties have ensured that the public shares in oil and gas revenue; royalties from onshore and offshore leasing are the second largest source of revenue to the federal government after income tax. Yet industry still obtains significant advantages, most notably in royalty

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[34] Pacific Northwest Electric Power Planning and Conservation Act (hereinafter cited as Northwest Power Planning Act), Public Law No. 96-501, 94 Stat. 2697, § 7(d)(2), 16 U.S.C. § 839e(d)(2).

[35] "Acquired lands" are lands acquired by the United States from private parties. These lands are found primarily in the eastern United States.

collection and tax policy. Although leasing has been reformed, previous practices have also benefitted operators.

Congress has also created some intra-industry subsidies within the oil and gas industry. The Oil-Spill Liability Trust was set up in 1989 and is financed on a 10-cent-per-barrel tax on oil entering U.S. ports. The Leaking Underground Storage Tank Trust Fund is financed by a 0.1 cent per gallon tax on motor fuels.

ONSHORE BENEFITS

THE LEASE

Until 1987, only lands within a "known geological structure of a producing oil and gas field" (KGS) could be leased on a competitive basis. This restrictive test, coupled with BLM's lack of technical abilities, meant that only about five percent of onshore leases were offered competitively. Lands outside of a KGS were leased non-competitively, with tracts not previously leased issued "over the counter" to the first applicant. Tracts covered by leases that had expired or had been relinquished, and which were not within a KGS, were offered through the simultaneous leasing system (known as the "lottery"), with a lessee randomly selected. Leases were issued non-competitively for a small filing fee and $1 per acre yearly rental payment.

The lottery system encouraged direct fraud on the public. At one point, hundreds of filing "services" were operating nationwide, defrauding the public by misrepresenting the value of tracts to be offered for lease and the filers' chances of winning a tract. In addition, so-called "40 Acre Merchants" obtained leases with no known oil or gas resources and peddled them to unsuspecting citizens using false promises of high return.[36]

Also, non-competitive leases often proved highly profitable. In August 1983, the BLM leased 18 tracts non-competitively in the Amos Draw region of Wyoming, located adjacent to producing lands. The government received $13,000 in rental fees and $1.2 million in lottery filing fees for the tracts. Within weeks, 12 of the 18 tracts were resold for more than $100 million. Eight of the 12 tracts were bought by the Davis Oil Company, which had discovered a substantial oil and gas reservoir on the federal lands adjacent to the lottery lands.[37]

The Amos Draw scandal led to the suspension of the onshore leasing program for 10 months in 1983-1984, prompted a National Academy of Sciences study, and eventually led to congressional enactment of the Federal Onshore Oil and Gas Leasing Reform Act of 1987, which abolished the KGS system and required that all leases be offered initially for competitive bid. According to the Congressional Research Service, these reforms have led to significant increases in revenue for the federal government; bonus revenues

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[36] "Legislation to Reform the Federal Onshore Oil and Gas Program," Hearing before the Subcommittee on Mining and Natural Resources, Committee on Interior and Insular Affairs, 100th Congress, 1st Session, Serial No. 100-11, July 28, 1987.

[37] Ibid.

as a percent of total onshore revenue increased from about 5% in 1987 to 12% in 1989.[38]

BLM now offers all leases at oral auction for a minimum bid of $2 per acre, with leases that have not been sold being offered non-competitively for up to two years following the auction. Holders of non-competitive leases pay a $75 administrative fee. The lessee pays rental to the federal government of $1.50 per acre for the first five years and $2.00 per acre thereafter. However, in 1986 holders of the approximately 19,000 non-competitive leases (or "lottery" leases) from before 1987 received a rental reduction from $3 to $1. The value of this subsidy is illustrated in a recent Inspector General report, which criticized the BLM for granting the reduction. The report estimated that between 1994 and 1997 the rental reduction may result in losses of up to $26 million for the federal government and several state governments.[39]

Until 1992, competitive leases lasted for five years and non-competitive for ten. However, the 1992 Energy Policy Act fixed the limit for both types of leases at ten years to eliminate any advantage from the longer lease. The lease term is the length of time during which the operator must begin production from the lease. If production begins within ten years, the lease runs until the well is dry. In 1992, BLM issued 2,614 competitive and 1,404 non-competitive leases.

Any lease transfers or reassignments must receive BLM approval. BLM approves and charges a fee for lease transfers; the agency also continues to collect rent and royalties after transfer. BLM approves exploratory and development drilling activity—in 1993 BLM approved 2,100 drilling applications.

To prevent the formation of monopolies, Congress limited the number of acres of oil and gas leases held by a single party in any one state. The cap is 246,080 acres in the lower forty-eight states, 600,000 acres in Alaska. However, BLM has not enforced the acreage cap aggressively. This is partly due to difficulties in tracking ownership information; the same individuals may be principals in several companies owning several leases each.

Exemptions to the acreage caps are available to operators entering into "development contracts" with the Department of the Interior. Each contract may involve several companies, giving them exploration rights in a specified region. Operators pay nothing to enter into development contracts, but instead commit to spending money on oil and gas development. Although companies do not receive any preference for leasing in the region, their knowledge of potential reserves provides them with an advantage over other bidders. Since 1986 the Department has approved ten development contracts. Intended originally to promote oil and gas development on existing leases, GAO found that development contracts benefitted operators:

> By designating the 10 contracts entered into and/or approved since 1986 as development contracts, Interior has enabled operators to lease

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[38] Marc Humphries, Congressional Research Service, "The Oil and Gas Leasing System on Federal Lands," 91-577-ENR, July 10, 1991.

[39] Office of Inspector General, Quick-Reaction Audit Report, "Onshore Oil and Gas Rental Reduction, Bureau of Land Management:" Report No. 94-I-595, May 1994.

> acreage in excess of the statutory limitation, resulting in increased concentration of control over federal oil and gas resources. One potential result of this concentration is that other parties wishing to obtain federal oil and gas leases and participate in developing these resources may be precluded from doing so.
>
> As of about August 1989, 9 of the 12 lease operators who were party to the 10 contracts had exceeded the statutory acreage limitation in the states where they had contracts.[40]

GAO also concluded that these contracts did not meet the legal standard necessary for designation as development contracts. Currently only one development contract, in Nevada, remains in effect.

Unitization and communitization agreements permit an operator to exceed both the acreage cap and producing deadlines. Unitization agreements promote more efficient exploration and development by allowing a single well to serve several leases. A communitization agreement permits the development of leases that would otherwise be unsuitable for drilling, by drilling from an adjacent lease.

The standard oil and gas royalty rate is 12½ percent, which is shared equally between the states and the federal government.[41] Any failure to collect royalties constitutes a benefit to the operator. Numerous reports have criticized MMS management of its royalty program, including a 1992 report issued by this committee, "Federal Minerals Royalty Management; An Analysis of Problems Related to the Department of the Interior's Minerals Management Service with Recommended Solutions."[42] While it is impossible to put an accurate figure on royalty losses, estimates have ranged from $167 million to $1 billion annually.

The oil and gas industry benefits further from several current MMS and BLM policies. In many cases, they are implemented retroactively, thus providing additional gains to the operator. The State and Tribal Royalty Audit Committee (STRAC) described this practice:

> . . . MMS's formal and informal practice of retroactively applying new regulations has become an increasing source of tension between the States/Tribes and MMS. Over the last few years, retroactive application of MMS's changed policies has cost the federal, State and Tribal governments both in terms of lost collectibles and refunds.[43]

STRAC believes that MMS and BLM are providing benefits to operators through several policies, which include:

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[40] General Accounting Office, Report to the Chairman, Subcommittee on Mineral Resources Development and Production, Committee on Energy and Natural Resources, U.S. Senate, "Mineral Resources: Interior's Use of Oil and Gas Development Contracts," GAO/RCED-91-1, September 1991.

[41] In Alaska, the state receives 90% of the royalty.

[42] A Report Prepared by the Staff of the Committee on Interior and Insular Affairs of the U.S. House of Representatives with the assistance of the General Accounting Office Staff, 102d Congress, 2d Session, Committee Print No. 8, March 1992.

[43] Letter to Tom Fry, Director, MMS, from the State and Tribal Royalty Audit Committee, March 10, 1994.

- In March 1992, MMS proposed a five-year reduction in royalty rates for stripper wells.[44] MMS argued that any lost royalties would be offset by increased production, but believes it is too early to determine whether this has occurred. However, the states and tribes question whether increased production has resulted from the reduced rates.[45]
- Operators may deduct certain expenses, known as "allowances" from the figure used to calculate the royalty. Before 1988 MMS required operators to receive prior approval before claiming allowances. After 1988, companies needed only to file notice of their intent to claim the allowance. MMS provided training on new filing procedures to many companies. Some companies still failed to file and have now lodged appeals for lost allowances totalling $21 million.

Several other MMS policies identified by STRAC contribute to an environment that might encourage companies to under-report, and make detection of under-reporting more difficult.

- MMS rarely imposes penalties on operators who habitually fail to comply with reporting requirements. In Utah, MMS has only penalized one company in nine years.[46] The State of Utah believes that many other producers should have been cited.
- In August 1992, MMS reduced assessments for late reporting from $10 to $3.
- Before 1988, MMS required gas processing plants to assess the value of the product both entering and leaving the plant. MMS used the higher valuation figure to calculate the royalty. Despite opposition from the states, the "value-in and value-out" standard was eliminated on federal leases in 1988.
- Although MMS has now established a five- to six-year cycle for auditing leases, it formerly faced a big backlog. The statute of limitations may make some audit claims uncollectible because MMS waited too long to commence or complete the audit. Many audits effectively remain incomplete awaiting compliance with MMS "orders to perform" (OTPs)—the orders requiring lessees to determine the amount owed the government on all of their leases due to errors discovered on a few. MMS has no plan for overseeing lessee compliance with OTPs.

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[44] The tax code defines stripper wells as wells producing less than 15 barrels per day. However, the industry defines them as wells producing less than 10 barrels a day.

[45] BLM is currently considering a separate reduction in royalty rates for heavy oil, i.e., oil with a high specific gravity.

[46] In June 1994, MMS penalized an Indian lease operator, Medallion Exploration, for willful neglect in making payments.

Oil and gas operators have derived additional benefits from BLM's failure to prevent loss of federal oil and gas that migrates or drains from federal to non-federal property. "Drainage" occurs when oil and gas in an underground reservoir flows to an area of reduced pressure surrounding a producing well. BLM is responsible for protecting federal and Indian leases from losing royalties caused by drainage. For several years, BLM failed to implement a successful drainage program, creating a backlog of drainage cases that reached 25,000 in 1992. A 1990 Inspector General report estimated that the government was losing between $18 and $59 million annually from federal and Indian leases.[47] BLM has reduced the backlog to about 4,000 cases and plans to eliminate it by 1995.

Oil and gas companies also gain financially through BLM's failure to inspect and enforce leases aggressively. In 1992, the Government Operations Committee estimated that $50-$75 million in revenues were lost annually through improper production verification.[48] In November 1989 the Office of Management and Budget identified BLM's inspection and enforcement as a material weakness.

LACK OF ENVIRONMENTAL ENFORCEMENT

Many of the mineral rights on Forest Service, FWS and NPS lands are privately owned, so the federal government is unable to impose conditions for development of the resource. Although commercial operators may cause environmental pollution, it is often the federal government that must pay for mitigation costs.

The federal government does not own all mineral rights on NPS land; some leases were grandfathered and other leases are accessible without crossing park land, which means that the federal government has no control over them. NPS is unable to regulate 69% of the 571 active non-federal oil and gas operations. Operators drill without a plan of operation, performance bond or security deposit. In the 13 units with unregulated leasing, operators have caused soil and water contamination, released poisonous gas, damaged vegetation and created safety hazards. Operators have no obligation to mitigate environmental damage; the costs are borne by the Park Service instead.

FWS faces similar problems because mineral rights were left in private ownership when many refuges were created. FWS reports oil and gas activity on 58 National Wildlife Refuge System units in 15 states. The refuge manager cannot deny an operator access to subsurface mineral rights and, depending on the terms of the agreement over mineral rights, has little or no authority over activity on the lease. The refuge manager may be able to impose additional controls if the lease is transferred. FWS has no control over any subleasing agreements.

Oil and gas drilling has caused severe environmental damage in some wildlife refuges.

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[47] Office of Inspector General, Audit Report, "Drainage Protection Program: Bureau of Land Management," Report No. 90-100, September 1990.

[48] "Decade of Decline," at p. 195.

- In Louisiana, the D'Arbonne and Upper Ouachita refuges have both been severely contaminated by mercury from oil and gas drilling activity.
- Conoco plans to search for oil and gas at the Aransas National Wildlife Refuge in Texas, where it owns the mineral rights. The refuge manager told a local newspaper, "My bottom line is, I'd rather not have an oil company here."[49]

Oil and gas operators who fail to plug and abandon wells derive an additional benefit when BLM is unable to locate the operator and the federal government pays for correct closure. In 1990 the Inspector General estimated that the government may be partially liable for about $300 million in costs for plugging about 22,500 wells.[50] Oil drilling wastes can cause serious environmental contamination; the responsible party receives a subsidy when the federal government pays for clean-up costs.

- Oil drilling waste has been found at the Lee Acres Superfund site near Farmington, New Mexico, which was originally a BLM-permitted landfill. Clean-up will cost between $10 and $12 million, but private parties will pay only half the clean-up costs, leaving the balance to be met by the federal government.

A fuller discussion of this issue appears in the committee's report "Deep Pockets: Taxpayer Liability for Environmental Contamination."[51]

OFFSHORE BENEFITS

Before 1978 the government leased offshore tracts competitively with cash bonus bids and a fixed 12½% royalty rate on gross receipts from production. The Outer Continental Shelf Leasing Act Amendments of 1978 set up eight alternative bidding systems including the option of variable royalty rates. The Department of the Interior judged that the alternative systems did not produce significantly different results from the old system. The Department also found alternative leasing procedures difficult to administer and reverted to competitive bids with a fixed 16.67% royalty rate. Any qualified operator may bid for a tract; all bids are sealed. Leases vary in length, but most are for ten years.

Although operators may seek royalty relief from the Secretary, the Department has received few applications. Many of those that have been received date from the period in the early 1980s when operators bid on higher royalty rates as one of the alternative bidding systems. According to the Congressional Research Service, there have been ten requests involving twenty leases to date. Five requests, affecting 15 leases, resulted in royalty rate reductions. In early 1992, the Administration reduced royalty rates for

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[49] Bill Dawson, "While whoopers away, an oil company will play," *Houston Chronicle*, p. 1A, April 2, 1994.

[50] Office of Inspector General, Semiannual Report, April 1990.

[51] "Deep Pockets," at p. 14.

"deep water"[52] wells to 12½%. Congress is currently considering a "royalty holiday" for some deepwater drilling.

Royalties from offshore wells are easier to regulate than those from onshore drilling. There are many fewer offshore sites and MMS can monitor production through pipelines bringing oil and gas onshore. The agency believes it possesses knowledge of day-to-day lease activity. However, many of the big corporations are now transferring their leases to smaller, independent companies. These smaller companies may not have the resources to remove platforms properly, thereby placing additional burdens on the federal government.[53] In a recent study, GAO estimated that the costs of lease abandonment for the 1,811 active OCS leases in the Gulf of Mexico total $4.4 billion. However, these leases were covered by only $68 million in bonds.[54]

Offshore oil producers gained perhaps their greatest benefits through the tax code, which is discussed more fully below. The Energy Policy Act of 1992 permitted independent oil and natural gas producers to claim more of their drilling costs as tax exempt business expenses. The reforms allowed deduction of the costs of drilling development wells, injection wells for enhanced recovery operations, and horizontal wells.[55]

COAL

Coal is another major leasable mineral—there are approximately 75.6 million acres of federal coal-bearing land, of which about one percent is currently under lease. BLM administers federal coal leasing in accordance with the Federal Coal Leasing Amendments Act (FCLAA) of 1976. The Minerals Management Service is responsible for collection and distribution of coal revenue, and the Office of Surface Mining oversees reclamation.

Like oil and gas, the coal mining industry receives fewer benefits than hardrock mining operators: federal land is leased, the government levies a royalty and operators must reclaim mine sites. The industry benefits, however, from leasing, royalty and reclamation policies.

THE LEASE

FCLAA increased the return to the government for coal mined on public land by instituting competitive procedures with regional leasing and lease-by-application leasing procedures. The former is initiated by government action; the latter by the applicant. Between January 1981 and February 1984, BLM sold 46 tracts through regional lease sales yielding $113.75 million in bonus bids. No regional lease sales have occurred since. Between 1979 and 1993, 84 tracts were leased through lease-by-application sales. The tracts contained about 1.58 billion tons of coal and yielded total bonus bids over $221 million. Applicants under both systems must submit land-use and environmental plans.

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[52] MMS defines deep water as 400 meters.

[53] "Deep Pockets," at p. 14.

[54] General Accounting Office, Report to the Chairman, Committee on Government Affairs, U.S. Senate, "Offshore Oil and Gas Resources—Interior Can Improve Its Management of Lease Abandonment," GAO/RCED-94-82, May 1994.

[55] Joseph P. Riva, Jr., Congressional Research Service, "Domestic Oil: Past, Present, and Future," 94-263 SPR, March 14, 1994.

BLM evaluates bids and can reject any that fail to meet fair market value. The agency originally used oral bidding, but concluded that sealed bids yielded a higher return. Oral bidding was eliminated in 1983 despite industry opposition. Once the lease is approved, the lessee pays rental of $3 per acre per year. Leases are awarded for twenty years, and the operator must meet a due diligence test within ten years, i.e., produce commercial quantities of coal. BLM does not extend leases that expire without due diligence. A lessee wishing to continue to hold the lease must repeat the application process.

Leases may be sold, but the purchaser must be in good standing with BLM and have proven diligence on any other leases. No restrictions are placed on the resale value, but little speculation occurs, because coal deposits are generally identified before mining commences. An operator cannot acquire a new lease if already holding a lease that has not produced commercial quantities of coal after ten years.

FCLAA allows applications for a "Logical Mining Unit" (LMU) to bring units of coal-bearing land, including state and private land, under the control of a single operator. The operator has 40 years to mine out an LMU. The process may, however, be used to circumvent the ten year due-diligence requirement. By adding land to the lease, the leaseholder may extend the term of the lease by forty years, thus depriving the federal government of additional revenue derived from resale of the original lease. For example, in Rocky Butte, Wyoming an LMU application for a lease dated January 1, 1993 would prevent termination of a lease expiring February 1, 1993. As of January 1994, 39 LMUs had been approved; 15 applications were pending.

THE MINERAL

A lessee pays a royalty rate of 12.5% for coal mined on the surface, and 8% for coal mined underground. In FY92 the government received a total of $265.7 million in royalties and rents from coal. An operator may apply to the Secretary for reductions in the royalty rate; applications are not always approved. On pre-FCLAA leases, operators pay royalties determined by a cents-per-ton formula.

Between March 1989 and September 1990, MMS permitted coal mining operators on federal leases to deduct fees for the Abandoned Mine Land and Black Lung programs from the royalty base. Although intended to stimulate production, a January 1990 study found that increases in productivity were not necessarily linked to the royalty cut. The states and tribes, who share in the royalties, complained that industry had gained several million dollars before former Secretary Lujan ended the practice.

ABSENCE OF ENVIRONMENTAL REGULATION

No reclamation of coal mines was required until 1977, when Congress approved the Surface Mining Control and Reclamation Act (SMCRA). SMCRA requires mining companies to post bonds for reclamation and sets up the Abandoned Mine Lands Program (AML) to finance clean-up of abandoned mine sites.[56] Strip mining, in particular, had caused widespread environmental damage. In 1969 the Appalachian Regional Commission found

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[56] This fund is distributed proportionally among the states, and may be used for reclaiming non-coal mines once all the abandoned coal mines in a state have been reclaimed.

that the discharge of acid mine waters had contaminated 5,740 miles of streams and rivers in that region alone.[57]

Federal SMCRA policies create cross-subsidization within the industry. Current and future operators pay for environmental damage caused before 1977. The AML is funded through fees levied on current coal operations and was recently extended until September 30, 2004. Current fees may be insufficient to meet reclamation costs; in 1993 the Office of Surface Mining calculated unfunded clean-up costs at $3,588,585,882.[58]

Since 1977, mine operators have been required to post bonds to cover mine reclamation. Between June 1989 and June 1994, operators forfeited 1,324 bonds to the states and OSM. The amount of the bond may not always be sufficient to cover the costs of reclamation. Procedures for meeting remaining clean-up costs vary according to state. Forfeitures rarely occur on federal lands because the operator is often a large company. Where an entity other than the operator pays for reclamation, the operator receives a subsidy.

NON-ENERGY LEASABLES

Congress reformed coal leasing in 1976, but left policies for non-energy leasable minerals intact. Some miners of such minerals as phosphate, trona, potash and lead zinc benefit from a non-competitive leasing process as well as from minimal royalty rates currently levied by the federal government.

Miners pay a $25 filing fee plus 50 cents per acre for permission to prospect for leasable, non-fuel minerals on federal lands. Once a mineral deposit is identified, the miner must prove discovery to BLM, and can then purchase the lease for fair market value. The lease runs for 20 years and an annual rental fee is charge if the mine is not producing.

Minimum royalty rates on gross production are set by statute; the Department of the Interior has the authority to raise them. In FY92 royalties from phosphate totalled $4.7 million, $18.5 million from trona, $3.9 million from potash and $2 million from lead zinc. Formerly, the potash royalty was determined according to the quality of the mineral. It is now a flat 2% rate.

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[57] James M. McElfish, Jr., Ann E. Beier, *Environmental Regulation of Coal Mining*, Environmental Law Institute, Washington, DC, April 1990.

[58] $186,453 was for unfunded non-coal reclamation.

Some of the minimum royalty rates set in statute compared to rates being charged follow:

	Current Royalty	Statute Minimum
Wyoming Trona	5%	2%
Searles Lake Trona (California)	5%	2%
Carlsbad Potash	2%	2%
Missouri Acquired Lead Zinc	5%	2%
Illinois Acquired Fluorspar	5%	0%
Potash Bonneville Salt Flats (Utah)	3%	2%
Phosphate	5%	5%

BLM is currently considering an increase in the trona royalty in Wyoming to make it consistent with private leases.

Salables

Salable minerals are those used primarily for construction, including include sand, stone, and gravel. As their name suggests, salables are sold rather than leased. Industry benefits from federal failure to ensure that sales are always at fair market value. But operators gain the most significant subsidy from a loophole that permits "uncommon" varieties of salable minerals to be mined as locatables, thereby depriving the government of both the land and the royalty.[59]

THE SALE

Sales occur either at exclusive use sites—used by one operator—or from non-exclusive sites used by more than one operator. The Materials Act of 1947, as amended, requires that salable minerals be sold at fair market value. However, government agencies and non-profit charities can obtain free-use permits.

Not all sales are competitive. BLM may negotiate a sales contract for less than 100,000 cubic yards;[60] the sale must be at appraised fair market value. BLM issues negotiated sale contracts for up to five years with a one-time one-year maximum extension.

Sales over 100,000 cubic yards must be bid competitively. BLM awards contracts for up to ten years with a possible one-time one-year extension. Contractors at exclusive sites reclaim the land; at non-exclusive sites contractors pay a fee to BLM, which performs the reclamation.

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[59] As defined in the Materials Disposal Act, as amended, "'Common varieties' as used in this Act does not include deposits of such materials which are valuable because the deposit has some property giving it distinct and special value . . . ." 30 U.S.C. §611.

[60] If there is a competing interest, the sale must be bid.

In FY93 BLM awarded 2,320 contracts for exclusive and non-exclusive sites. These contracts were for 10,374,000 cubic yards of material worth $5,269,000. The material is extracted over the life of each contract; the revenue from actual production was $4,400,000.[61] BLM also issued 380 free use permits. Under these permits, the government agencies and non-profits took 6,665,000 cubic yards of material worth $2,894,000.

A recent report by Interior's Inspector General criticized several aspects of BLM's management of the program.[62] Although BLM has the authority to reappraise sale contracts every two years, the agency does not always make reappraisals, due to lack of resources. The report found that BLM relies on outdated appraisals, including some that are 13 years old. The Inspector General estimated that between October 1, 1990 and September 30, 1992 the government may have lost as much as $682,000 due to appraisals below fair market value.

- At the El Centro Resource Area in California, BLM sold sand and gravel for 13 years based on a 1980 appraisal of $0.38 per cubic yard. An August 1993 appraisal for a proposed BLM land exchange priced sand and gravel at almost twice that value, at $0.75 per cubic yard. Based on the 1993 appraised price, the Inspector General estimated that the government has lost as much as $545,000 in revenues for FY91 and FY92. In September 1993 the El Centro Resource Area increased the price to $0.60.[63]

The Inspector General also found that BLM could raise up to $3 million annually in additional revenues if the agency adopted more cost-effective methods to improve production verification.

- At the Taos Resource Area in New Mexico, one operator reported removal of more mineral materials than allowed for in the contract. Although the contractor reported the overage to BLM at the beginning of February 1990, the agency did not bill the operator for the additional 23 tons until July 1990. In March 1991, the same contractor again reported excess removals of 24 tons, but BLM again did not follow up on billing. In August 1991 the contractor paid $8,000 voluntarily.[64]

BLM personnel often fail to monitor or enforce contract payments. The Inspector General's review of 37 contracts found that payments of $334,000 had not been made on 11 contracts. BLM has adopted new policies for

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[61] Production was primarily from Nevada ($1,133,000), California ($845,000), New Mexico ($749,000), Wyoming ($430,000), and Utah ($313,000).

[62] Office of Inspector General, Audit Report, "Sale of Materials from Public Lands, Bureau of Land Management," Report No. 94-I-496, March 1994.

[63] Ibid at p. 6.

[64] Ibid at p. 8.

appraisal, inspection and enforcement designed to increase revenues to the federal government. The program is not fully funded, however.

BLM also loses significant revenue from salable minerals on mining claims. According to the Department's interpretation of the law, the agency does not have the authority to remove minerals from unpatented claims. The Inspector General calculated that in 1991 and 1992 the government lost about $4 million.[65] By contrast, the Forest Service has adopted a different interpretation, allowing sales of minerals from unpatented claims.

"UNCOMMON" VARIETIES

Some salables may be considered locatables if shown to be of "uncommon" varieties. This loophole constitutes a subsidy because more generous policies govern the extraction of locatables.[66] The federal government loses both land (if the claim is patented) and many million dollars in revenue. In addition, BLM must expend considerable resources on the administrative legal process to determine the validity of applications for uncommon variety minerals.

- In Oregon, the federal government has lost millions of dollars through patents for uncommon sand. In October 1989 the Department of the Interior approved an application to patent 780 acres of land for $1,950 in the Oregon Dunes National Recreation Area. The Forest Service has attempted to reacquire the land for the recreation area; negotiations over its value have suggested figures as high as $12 million. In a separate incident, the Department of the Interior withdrew another area of the Oregon Dunes for protection, but during a five week lapse in the withdrawal, Portland resident James Aubert staked new claims on this additional area.

Industry-Wide Benefits

In addition to the subsidies and benefits outlined above, further federal policies provide industry-wide advantages that apply to all locatable, leasable and salable minerals. These include favorable tax provisions, exemptions from environmental regulations, and federally funded research and development.

TAXATION

The tax code contains numerous special provisions to accommodate the minerals extraction industries. These provisions give concrete monetary benefits in the form of lower taxes—sometimes completely eliminating annual income tax liability. In addition to the tax benefits discussed here, mineral developers can also take advantage of the special tax treatment of publicly traded limited partnerships, discussed in the section on Timber below.

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[65] Ibid (Memorandum to Assistant Secretary-Land and Minerals Management from Assistant Inspector General for Audit).

[66] See "Locatables" for a fuller discussion of the range of benefits.

All mineral resource development can take advantage of the depletion allowance,[67] which provides a deduction to account for the consumption (depletion) of the mineral resource over time.[68] The depletion allowance goes further, however, than simply accounting for the exhaustion of the resource; it provides a positive incentive for developing these resources.[69] Depletion allowances apply to any ownership interest in a resource that is entitled to income from the resource, including an ownership interest in a mine that is depleting federally owned hardrock minerals.

The owner must take an allowance at the higher of two depletion calculations: cost depletion and percentage depletion. Cost depletion is calculated by dividing the remaining costs of development[70] by the remaining years of anticipated resource recovery. Percentage depletion is calculated by taking a certain percentage of gross income. The percentage used for calculating percentage depletion varies from resource to resource: it is 15% to 25% for independent oil and gas producers and stripper well operators, 22% for uranium, 10% for common variety minerals, and 15% for gold, silver and copper. Percentage depletion is capped at 100% of net income for each oil and gas property, and 65% of total net income for each oil and gas owner, but at 50% of net income from each property for other minerals.[71]

Mineral extractors also receive special deductions for their exploration and development costs on an annual basis, under systems that vary between fuel minerals and non-fuel minerals. Rather than capitalizing these costs and depreciating them over time, mineral companies can deduct them as expenses in the year they are incurred. This provides a benefit the year the expenses are deducted, and an overall economic benefit by reducing taxes in current rather than future dollars.

For purposes of expensing exploration and development costs, oil and gas and other fuel minerals (coal, uranium, oil shale, etc.) are treated differently from non-fuel minerals. Fuel minerals developers can deduct only "intangible drilling and development costs" (IDCs) like fuel, labor and maintenance; they must treat tangible equipment as depreciable assets. IDCs generally comprise 75% to 90% of the cost of developing fuel minerals.[72] Non-fuel minerals developers can expense *all* their exploration and development expenses, but these are generally a smaller proportion of the cost of bringing a mine into production.

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[67] Larger oil and gas companies may not take the depletion allowance.

[68] This provision also gives depletion allowances for other "depletable" natural resources—notably timber from private lands.

[69] *United States* v. *Swank*, 451 U.S. 571, 576 (1981) ("it provides a special incentive for engaging in this line of business that goes well beyond the purpose of merely allowing the owner of a wasting asset to recoup the capital invested in that asset.")

[70] The remaining costs of development are the total costs of development, minus those costs already deducted as expenses or depleted.

[71] Coal, iron and timber are allowed a capital gains rate on taxes in lieu of percentage depletion.

[72] "Tax Expenditures: Compendium of Background Material on Individual Provisions," Committee on the Budget, United States Senate, S. Rpt. No. 102-119, 102d Congress, 2d Session, November 1992, at p. 56.

In addition to the special treatment under percentage depletion described above, oil and gas operators receive many other special tax benefits. A few of these include:

- exemption of independent producers from the alternative minimum tax;
- 15% income tax credit for "enhanced oil recovery" from stripper wells; and
- a production tax credit for alternative fuels (including natural gas from western coal seams), which expires in 2002.

EXEMPTIONS FROM ENVIRONMENTAL REGULATION

Congress has tightened environmental regulation in recent years, but the mineral extractive industry is exempted from some generally applicable requirements. These exemptions relieve industry of the costs of compliance and environmental remediation.

For example, the Resource Conservation and Recovery Act (RCRA), which regulates the disposal of solid and hazardous waste, does not apply to mining wastes or to waste from oil and gas exploration and production. In addition, some mineral processing wastes are exempt. In 1991, the Environmental Protection Agency (EPA) estimated that these wastes exceeded five billion tons annually.[73] Although some states have their own RCRA programs, these often codify the federal statutory language, including exemptions.

The extractive industry is also exempted from another important environmental standard, the Toxic Release Inventory (TRI). Approved under the 1986 Emergency Planning and Community Right-to-Know Act,[74] the TRI mandates annual reporting of routine releases of some 320 toxic chemicals into the air, water, land and deep injection wells. Mineral extractors are generally exempt from TRI reporting, although EPA is currently considering expansion to include mining and oil and gas extraction and exploration.[75] Although the total value of the existing exclusion is unknown, the American Petroleum Institute provided committee staff with an estimate of the costs of TRI compliance for onshore operators: $200 million for the first year and $100 million annually thereafter.

The Kennecott Copper mine in Utah demonstrated the extent of the TRI exception for hardrock mining when it mistakenly filed TRI information in 1987.[76] The company reported air discharges of 64,000 pounds of copper, water discharges of 7,900 pounds of copper, and land disposal of 130 million pounds of copper. The mine also released other chemicals in large quantities,

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[73] "RCRA Special Waste," Hearing Before the Subcommittee on Transportation and Hazardous Materials, Committee on Energy and Commerce, House of Representatives, 102d Congress, 1st Session, Serial No. 102-69, September 12, 1991.

[74] The Emergency Planning and Community Right-to-Know Act was included as Title II of the Superfund Amendments and Reauthorization Act of 1986 or "SARA." 42 U.S.C. §§ 11001-11050 (1988).

[75] The agency anticipates publishing a proposed rule in March 1995.

[76] EPA believes that this reflects reporting for the entire facility, including mining and mineral processing.

including arsenic, barium, zinc, chromium, lead, sulfuric acid and cadmium. These discharges from a single site qualified Kennecott as the ninth leading source of toxic pollution reported in the 1987 TRI.[77] Industry not only saves the costs of compliance but also avoids increased public scrutiny of its environmental policies.

The oil and gas industry benefits from a number of additional regulatory and statutory exemptions from major environmental statues. For example, the Army Corps of Engineers' Clean Water Act regulations enable oil companies to construct oil and gas structures under nationwide permits, rather than requiring site-specific permits.[78]

RESEARCH AND DEVELOPMENT

The extractive industry derives significant benefits from a wide range of research and development (R&D) funded and conducted by government agencies. Although the government has a responsibility to promote R&D, many of these technological advances are provided free-of-charge to industry for commercial gain. Congressman Robert Walker criticized this practice during consideration of the Environmental Technologies Act of 1994 by the Subcommittee on Technology, Environment and Aviation of the Science and Technology Committee. The Committee adopted his amendment requiring that companies repay the financial assistance awarded under that Act if their product is "marketed or used."[79]

This repayment requirement does not apply, however, at the Department of the Interior, where the Bureau of Mines funds programs to improve mining technology as well as minerals and materials science. The Bureau of Mines collects and assesses mineral information regarding known resources on BLM and Forest Service land. The agency also conducts regulatory analyses that are used by industry. For example, Bureau of Mines analysts evaluated the impacts of a tax on primary lead production and imports proposed by Congressman Ben Cardin. At a June 1992 hearing before the Ways and Means Committee, the agency's director testified against the tax because it would have serious impacts on the domestic lead industry.[80] The Bureau is planning cost-sharing initiatives to develop technology in partnership with industry.

The U.S. Geological Survey conducts research into mineral exploration and resource assessment, and is a center of scientific and technical expertise in the earth sciences. The service also prepares maps and information systems including a data system identifying mineral deposits.

The Department of Energy (DOE) funds more than twenty program offices involved in basic and applied materials research. It also has site-specific initiatives. At the heavily contaminated Clark Fork mine sites near

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[77] Deborah A. Sheiman, "The Right to Know *More*: Toxic Releases Into The Environment," Natural Resources Defense Council, Washington, DC, May 1991.

[78] 33 C.F.R. §330 Appendix A, B.8.

[79] "Environmental Technologies Act of 1994," Hearing and Markups before the Subcommittee on Technology, Environment and Aviation, Committee on Science, Space, and Technology, U.S. House of Representatives, 103d Congress, 2d Session, No. 101, February 22, 1994.

[80] U.S. Department of the Interior, Bureau of Mines, "Research 93: a summary of significant results and economics in mineral technology."

Butte, Montana, DOE's Resource Recovery Project is developing technology to separate water and minerals. Also at Butte, DOE and EPA fund the Mine Waste Technology Program. Private companies are conducting the research, so the technologies are already in the private sector. The Alliance to Save Energy[81] estimated that in 1989 DOE spent between $1.975 and $2.125 million on energy research and development.

The coal industry gains from DOE's Clean Coal Technology initiative. The program provides grants to build demonstration or commercial coal plants using advanced, low-pollution technologies. It was originally funded with a $500 million transfer of funds from the federally owned Synthetic Fuels Corporation, which was abolished in 1985. Since then, the program has received an additional $2 billion.[82]

The National Science Foundation, the Department of Commerce, the Department of Defense and the National Aeronautics and Space Administration also sponsor R&D useful to the extractive industry. The Organization of Economic Cooperation and Development estimated that federal expenditures for mining and minerals-related R&D in 1989 totalled $138.4 million.[83]

WHO GETS THE BENEFITS?

The benefits accorded the extractive industry serve a range of companies. The era when the industry was dominated by family or individual operations is now over; multinationals and large corporations are present in all sectors of the extractive industry.

Mining companies are, for the most part, large operations with the resources and expertise to develop mineral deposits. There are a total of 425 operating mines wholly or partly on BLM land, 1200 producing mines on Forest Service lands and six on Park Service lands.[84] According to the Forest Service, 17 of the 1200 producing mines on its land employ more than 100 people.[85]

Many of the mining companies operating in the United States are foreign-owned. According to the Mineral Policy Center, 23 of the 40 highest producing gold mines are operated by foreign-owned or foreign-controlled companies. The parent company of American-Barrick, which heads the list with its Goldstrike Mine, is based in Canada. Other foreign-owned companies include Kennecott-Utah Copper Corporation, a wholly-owned subsidiary of Rio Tinto Zinc, PLC, England; and Echo Bay Mining Co., a Canadian-based corporation. Independence Mining Company, Inc. is 70% owned by Minorco, USA, a wholly-owned subsidiary of Minorco,

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[81] Douglas N. Koplow, "Federal Energy Subsidies: Energy, Environmental, and Fiscal Impacts," The Alliance to Save Energy, Lexington, Massachusetts, April 1993.

[82] Energy Information Administration, "Federal Energy Subsidies: Direct and Indirect Interventions in Energy Markets," SR/EMEU/92-02, November 1992.

[83] OECD Documents, "Mining and Non-Ferrous Metals Policies of OECD Countries," OECD 1994.

[84] BLM and the Forest Service use different criteria for assessing what constitutes a producing mine, which accounts for the disparity in figures.

[85] Information about these 17 mines appears in the Appendix.

Luxembourg, which in turn, is a subsidiary of Anglo-American, a South African-based company.

BLM has recently begun collecting data about claims on federal land. The agency estimates that 30,000 of the 330,000 claims are covered by the small miner's exemption, i.e., no more than ten claims are held by a single family. A total of 10,000 to 15,000 claimants hold the 330,000 claims.

Less information is known about operators extracting other minerals. Most federal lands for coal leasing are located in the western states where mining operations are large companies. The largest producers on federal land are ARCO, AMAX, Kerr-McGee, Kennecott, Exxon, Peter Kiewit, Western Energy, Peabody, Colowyo, NERCO, BHP-UTAH and Mobil. Some of these companies also develop hardrock minerals as well as oil and gas. In the eastern states, notably Appalachia, coal mining operations are considerably smaller.

Oil and gas is developed by "independent" and "major" oil companies. Generally, independent companies are solely exploration and production companies, while the majors are integrated oil companies involved in all stages of development including exploration, production, marketing, transportation, refining and marketing. Independents vary in size; the majors are large corporations—variously defined but generally including companies such as Mobil, Exxon, Texaco, Shell and Chevron. There are over 8,000 independents operating in the United States; estimates of the number of majors range between 7 and 23, depending on how the term is defined.

Independent oil companies drill about 85% of onshore wells in the U.S and produce about 31% of domestic oil.[86] However, acreage cap exemptions under "development contracts" clearly benefit only majors, which have the resources to explore over wide areas. GAO's September 1991 study of development contracts found that "all nine of the lease operators were major or large independent oil companies, and the amounts of lease acreage they controlled in excess of the statutory acreage limitation ranged from about 9,000 to about 878,000."[87]

The oil and gas leasing system permits the initial holder of the lease to realize the value of the subsidy in resale of the lease. Although the Federal Onshore Oil and Gas Leasing Reform Act instituted new procedures, BLM still places no limits on the transfer of a lease. The agency ensures only that the new holder is qualified to hold the lease.

Offshore leases have generally been developed by majors with the resources necessary to meet exploration and production costs. Although Congress intended that the Outer Continental Shelf Lands Act Amendments of 1978 encourage smaller companies, this did not happen. In 1983 there were nine large majors and 15 majors out of a total of 62 companies operating on the outer continental shelf. Declining production from individual offshore wells, however, has prompted larger companies to pull out in favor of independents. In 1992 there were 11 large majors and 17 majors out of 120 operators operating offshore.

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[86] The majors often "farm out" exploration and production to the independents, to take advantage of the more favorable tax treatment the independents receive.

[87] General Accounting Office, Report to the Chairman, Subcommittee on Mineral Resources Development and Production, Committee on Energy and Natural Resources, U.S. Senate, "Interior's Use of Oil and Gas Development Contracts," GAO/RCED-91-1, September 1991.

Most producers of salable minerals are individuals or small operators. Based on FY91 and FY92 data, BLM reported that 44% of sales were for less than 100 cubic yards of material, and 45% of sales were for between 100 and 5,000 cubic yards of material. Only 1% of sales were from more than 50,000 cubic yards, accounting for 44% of the total revenue. Most large sales are from exclusive sites, although five community pits near Las Vegas are shared by 16 operators.

IRRIGATION WATER

Perhaps the single area in which federal policies provide the greatest number of overlapping programs and the deepest array of supports to resource users is irrigation. The federal government provides Bureau of Reclamation (BuRec) water to farmers and urban consumers in the seventeen Reclamation states.[88] This report focuses largely on BuRec's irrigation water deliveries, because water for urban uses is not intentionally subsidized, and in fact receives far less subsidy.

BuRec constructs major projects throughout the West, then sells the water to farms, or to local water and irrigation districts that in turn supply the water to individual farms. For example, the largest project, the Central Valley Project in California, has thus far involved a capital investment of $4 billion to construct several dams and related distribution systems traveling hundreds of miles to supply irrigation water to more than 2.5 million acres of land on almost 20,000 farms. The terms of sale for BuRec water provide a substantial discount to the irrigators compared to the cost of developing and operating the projects themselves.

The use of water for irrigation substantially expands the productive capacity of agricultural lands in the arid West, but it also has substantial natural resource impacts. These impacts vary from project to project, but often include:

- damage to fisheries and recreation on depleted streams;
- destruction of anadromous fish stocks, warm water fisheries and whitewater recreation due to the construction of dams;
- loss of sediment as silt settles out in reservoirs;
- fish mortality from unscreened diversions;
- reduction of groundwater tables, leading to well closures and ground subsidence;
- pollution of water and wetlands with pesticides, fertilizers, salts and trace metals from irrigation tail water and drain water; and
- salt build-up in irrigated soils.

Understanding the array of federal support to western irrigators requires an examination both of the intentional and unintentional subsidies provided through the Reclamation program itself, and of the various additional supports provided to those irrigators, largely through the programs of the Department of Agriculture. The following discussion describes the Reclamation program

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[88] The seventeen Reclamation states are all of the contiguous 48 states with land west of the 100th meridian: North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Texas, Montana, Wyoming, Colorado, New Mexico, Idaho, Utah, Arizona, Washington, Oregon, Nevada and California.

in some detail, and summarizes the additional supports provided through other programs.

WHAT ARE THE BENEFITS?

The Bureau of Reclamation's irrigation support programs started with the passage of the Reclamation Act of 1902. Major revisions of the law in 1926, 1939 and 1982 resulted in the current basic structure of the Reclamation program, which provides interest-free repayment of the construction costs of major irrigation projects throughout the West. The terms of construction, repayment and operation of these projects provide a number of overlapping policies that cumulatively increase subsidies to irrigation water users. The water subsidy to irrigators is supplemented by a variety of subsidies provided through national agricultural programs. In addition, irrigators benefit from subsidies for water pumping power and river-borne transportation on federally improved waterways and from certain exemptions from environmental laws.[89]

Low Water Prices

When the federal government constructs and operates an irrigation project, the initial capital investment and operating expenses are paid by the taxpayers. Although in principle the taxpayers' investment is recouped through charges for the water supplied, several different factors, discussed below, together make federal irrigation water far less expensive than it would be if local irrigators were to construct and maintain an irrigation project, and deliver the water. Any estimate of the total subsidy must be based on judgments regarding which of these factors are included in the subsidy.

In 1988, the Department of the Interior supplied an estimate of the total irrigation subsidy to Chairman Miller, then-Chairman of the Subcommittee on Water and Power of the Committee on Interior and Insular Affairs.[90] That letter defined the irrigation subsidy as:

> [T]he difference between the annual Federal cost of constructing, operating, and maintaining the irrigation portion of a project, including interest at a Treasury rate on the capital investment, and the revenues received by the Federal Government toward those costs.

This definition of the irrigation subsidy would include only those factors described as "interest-free project repayment," "ability to pay for water," and part of "delayed repayment" below.

According to the Department's 1988 calculations, the total subsidy to irrigators from 1902 through 1986 was $9.8 billion. The average annual subsidy through 1986 was $117.3 million; the actual annual subsidy in 1986 was $534.3 million. The difference between the average and current annual subsidy results from the fact that the annual subsidy has been increasing over

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[89] Many of these projects also contain a hydropower component, which provides low-cost energy to non-irrigators. This low-cost energy is discussed below, in the section on Hydropower.

[90] Letter from Wayne Marchant, Principal Deputy Assistant Secretary for Water and Science, U.S. Department of the Interior to Honorable George Miller, Chairman, Subcommittee on Water and Power Resources, Committee on Interior and Insular Affairs, February 24, 1988.

time as more irrigation projects are built, increasing both the capital investment and annual expenses of the program.

These 1988 figures were found highly questionable in a report by the Subcommittee on General Oversight and Investigations, "Department of the Interior's Efforts to Estimate the Cost of Federal Irrigation Subsidies: a Record of Deceit."[91] In that report, the Subcommittee documented efforts within the Department of the Interior to discredit an initial estimate of the subsidy prepared by Interior's own analysts. The Subcommittee's investigation revealed that the Department's analysts had calculated the total irrigation subsidy since 1902 at $19 to $24.2 billion.[92] The Office of Management and Budget and the Congressional Budget Office (CBO) also disputed the Department's calculation, with a recalculation by CBO based on BuRec's figures revealing a total irrigation subsidy of $33.7 to $70.3 billion.[93]

As mentioned above, even this largest estimate by CBO does not assess the value of all the subsidy factors discussed in this section. Committee staff knows of no study that has analyzed the total federal subsidy to irrigators based on the full array of water pricing factors discussed below. Further, no one has ever calculated the additional support provided to these same irrigators through Department of Agriculture programs.[94]

INTEREST-FREE PROJECT REPAYMENT

The basic subsidy incorporated into the Reclamation program is the interest-free repayment of the construction costs of irrigation projects, including dams, distribution systems and sometimes drainage systems. Under Reclamation law, the cost of constructing these projects is repaid to the federal government over a 40 to 50-year period. Irrigators are required to repay the portion of the construction costs allocated to irrigation; that is, that portion of the costs that BuRec determines is the share of the project that supports irrigation.[95] The irrigators, however, pay no interest on the unpaid irrigation construction costs. Thus, Reclamation construction repayment is like receiving an interest-free loan for 40 or 50 years.[96]

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[91] Subcommittee on Oversight and Investigations, Committee on Interior and Insular Affairs, Committee Print No. 9, 100th Congress, 2d Session, December 1988 (hereinafter cited as O&I Report).

[92] Ibid at p. 2.

[93] Ibid at pp. 6-9.

[94] A recent calculation by the Environmental Working Group concluded that USDA acreage reduction and farm payment programs nationwide—for irrigators and non-irrigators—contribute a total of $83 to $111 billion to farm land values. Eileen M. Gannon & Kenneth A. Cook, "Faking Takings: Farm Subsidies and Private Property in Perspective," Environmental Working Group, June 1994. This calculation was based on USDA data and analysis developed by USDA economists. Robbin Shoemaker, Margot Anderson & James Hrubovcak, "U.S. Farm Programs and Agricultural Resources," USDA Economic Research Service, Agriculture Information Bulletin No. 614, September 1990; Robbin Shoemaker, "How Technological Progress and Government Programs Influence Agricultural Land Values," USDA Economic Research Service, Agriculture Information Bulletin No. 582, January 1990.

[95] Other shares of construction costs are allocated to municipal and industrial water supply, hydropower generation, flood control, fish and wildlife, recreation, and other project purposes.

[96] At the same time the government is making this loan, it must borrow money to finance the capital investment; the July 1994 interest rate for financing the deficit was 7.25%.

Calculating the amount of subsidy incorporated in this interest-free repayment depends upon the rate of interest deemed to be forgiven. Since projects have been built at different times, interest rates that might be charged on construction costs have varied substantially.

As a rough estimate, 40-year repayment of a loan at 0% constitutes over 50% subsidy to the water user at a 4% discount rate. In other words, a water user repaying a loan at 4% simple interest over 40 years would pay more than twice as much as a water user repaying the same loan at 0% interest. At a more modern discount rate of 8%, the interest forgiveness provides a 70% subsidy over 40 years. The 10-year "development period" that may be added before the beginning of repayment reduces the value of eventual repayment even further. Although interest forgiveness is the major subsidy for irrigators, a number of other provisions and subsequent interpretations of Reclamation law have compounded the subsidies far beyond this basic provision.

ABILITY TO PAY FOR WATER

Another large subsidy for the users of many irrigation projects derives from the Secretary of the Interior's determination of the irrigators' "ability to pay" for water. The Reclamation Project Act of 1939 allows the Secretary of the Interior to reduce water charges to irrigators, based on a calculation of whether the interest-free project repayment cost would exceed their ability to pay for the water.[97] This unpaid portion of the project repayment is then reallocated to the share of the project repaid through sales of federal hydropower. Hydropower policy, discussed in more detail in the Hydropower section below, then projects that repayment at zero interest onto the end of the power repayment period, making that portion of the irrigation repayment virtually worthless.

As interpreted by BuRec, the ability-to-pay determination is not based on irrigator-by-irrigator calculations or on year-to-year conditions, but instead is based on a "farm budget analysis" developed when BuRec first enters into repayment contracts for a project. Before determining the amount that water users will be charged, BuRec prepares a sample farm budget for irrigators who will use water provided by the project. After determining the anticipated income, BuRec subtracts anticipated costs and a modest net farm income. The remaining amount represents the calculated "ability to pay" for water. If this amount is less than the project repayment cost, the price for water is reduced accordingly in the repayment contract, and the unpaid construction cost is reallocated to power sales.

Once this ability-to-pay calculation is incorporated into a 40-year repayment contract, it remains an additional subsidy on the price of water throughout the life of the contract. Even if agricultural prices rise, costs fall, or federal agricultural programs (discussed below) reduce economic risks, the irrigators continue to receive water at the discounted rate. BuRec analysts suggest that farm profitability remains approximately constant, because of inflation rates for farm inputs; however, BuRec has never actually analyzed the impact of this potential benefit.

The ability-to-pay provision has provided deeper and deeper discounts in recent years. The cost of projects, and thus the repayment cost for water, on

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[97] Reclamation Project Act of 1939 §9(d), 43 U.S.C. §485h(d).

newer projects exceeds by many times the repayment cost for older projects. As a result, the irrigators' ability to pay for water from newer projects is often a smaller and smaller proportion of the actual repayment cost.

- For example, the Central Arizona Project was declared "substantially complete" in September 1993, triggering the beginning of the repayment period. Nonetheless, the Arizona irrigators cannot even afford the operation and maintenance costs (O&M) for the project, much less repayment of the capital costs. BuRec set a nominal repayment charge of $2 per acre-foot. BuRec's O&M charges to the local water district amount to approximately $60 per acre-foot for agricultural water, but the local water district has proposed discounting that price through local mechanisms to $17 to $27 per acre-foot in order to persuade farms to take the water.[98]

Legislative provisions have sometimes discounted water prices still further because of an individual water district's difficulty with repayment.

- Congress authorized transfer of the Vermejo Project in New Mexico to the local district in 1980, with further repayment delayed indefinitely, "until such time or times as the Secretary determines repayment to be reasonably feasible."[99]
- In 1943, Congress wrote off repayment of all construction costs over $3,080,000 on the W.C. Austin project (then called the Lugert-Altus project) in Oklahoma,[100] reducing the irrigators' repayment obligation by $8,293,000.

DELAYED REPAYMENT

The price of irrigation water is subsidized further because the repayment obligation does not begin until all major project features are officially declared complete. This means that the government forgoes both repayment and interest through the period of construction, which may last years or even decades. In addition, irrigators may receive water at minimal prices once some project features—or entire "divisions" or "units" of projects—are available to deliver water, although they do not begin repaying the capital until construction of the entire project is substantially complete.

Postponing repayment until construction is finished provides a larger subsidy than might be expected. In constructing major features like dams, the majority of construction costs are incurred in the first few years, although construction may take more than a decade. In addition, the most expensive features, like dams, are usually built first, while less expensive water

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[98] "Central Arizona Project," Oversight Hearing before the Subcommittee on Oversight and Investigations, Committee on Natural Resources, House of Representatives, 103d Congress, 1st Session, Serial No. 103-64, December 10, 1993, at p. 45 (testimony of Mr. Johnson).

[99] Act of December 19, 1980, Public Law No. 96-550, 94 Stat. 3221, §401.

[100] Interior Department Appropriation Act, 1944, Public Law No. 78-133, 57 Stat. 451.

distribution systems are built in the final years of project construction. Therefore, construction costs are heavily weighted toward the earliest years of the construction period, making the foregone interest on that capital investment significantly higher than if costs were evenly distributed over the years of construction.[101]

Furthermore, the delay in repayment has often meant that significant project features or whole "divisions" are constructed and deliver water for many years without ever requiring one cent of repayment by water users. This delay in repayment is known as "rolling repayment," since the entire project repayment obligation is rolled over into the 50-year repayment period following completion of each new division of the project. In the interim, project water is delivered under "water service contracts." The Reclamation Project Act allows the Secretary to recover an appropriate portion of the capital cost of the project under service contracts, but typically little or no capital repayment is required.

- The most extreme example of rolling repayment is the Central Valley Project (CVP) in California, a massive project containing several reservoirs and distribution systems that can operate independently (though in practice their operations are carefully coordinated). BuRec's interpretation of the Reclamation laws led to delaying CVP repayment more than 40 years after the first project water was delivered.

  The CVP was first authorized by the Secretary of the Interior, using emergency appropriations, in 1935. After further authorizations by Congress, water deliveries began in 1940. However, no repayment of the project was required at that time, or as other divisions of the project began water deliveries over the next 46 years. The last major feature completed thus far, the New Melones Dam, was completed in 1983; however, the project has not yet been declared complete. CVP-related legislation passed in 1986 required that repayment of existing features be completed by 2030.[102] Thus, a repayment policy approved in May 1988 assures that the interest-free repayment of the entire project—including project features constructed as long ago as the late 1930s—will be completed in 2030.

MISCELLANEOUS REVENUES

Innumerable "miscellaneous revenue" sources can be found on BuRec project lands, including golf courses, mining, grazing, oil and gas leases, and farming. Over half of BuRec's annual income comes from sources other than water sales—most comes from the crediting of mineral royalties into the

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[101] This distribution of costs gave rise to one of the Congressional Budget Office's criticisms of BuRec's 1988 calculation of the total irrigation subsidy. BuRec's calculations assumed that construction costs were incurred evenly across project construction, rather than weighting those costs toward the first few years. O&I Report at p. 6.

[102] Act of October 27, 1986 §105, Public Law No. 99-546, 100 Stat. 3050.

Reclamation Fund, but BuRec also earns about $1 million per year from other activities conducted on project lands. In many projects, irrigation water costs are further underwritten by the practice of crediting these miscellaneous revenues from local non-irrigation businesses against the project repayment obligation.

Some specific crediting of revenues to water users' repayment obligations has been authorized by Congress.[103] BuRec's guidelines for these revenues, however, have been responsible for much broader crediting practices, often without Congressional authorization. In the past, BuRec policy offset repayment obligations with miscellaneous revenues from any land acquired for construction of reimbursable project features, on the theory that the actual cost of construction was reduced by that offsetting income. Thus, rather than going to the government, that income effectively went to the water users.

Crediting revenues from these activities against the capital cost of the projects often reduces the irrigators' annual repayment costs substantially.

- For example, a 1975 Carlsbad Irrigation District repayment contract was deemed completely paid off by 1990, largely from crediting of oil and gas revenues.[104] According to the Inspector General's report discussed below, almost $1.3 million of these miscellaneous revenues were inappropriately credited to the district's federal obligations.

In many cases, the promise of miscellaneous revenues is incorporated into project repayment contracts, making it difficult for BuRec to change the policy of crediting miscellaneous revenues against repayment.[105]

In 1992, the Inspector General of the Department of the Interior reviewed the accounting of miscellaneous revenues on 27 Reclamation projects. He determined that revenues had been inappropriately credited to water users' reimbursement obligations on 18 of those 27 projects, resulting in "unauthorized subsidies of at least $3.8 million."[106] In addition to the Carlsbad Irrigation District example discussed above, the Inspector General found that:

- From 1955 through 1991, BuRec improperly credited about $900,000 to the Greenfields Irrigation District from grazing leases on lands withdrawn for the Sun River Project.
- $2.6 million in revenues from concessioners on the Solano Project was improperly credited toward repayment of the

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[103] For example, income from power sales, grazing, farming, and town sites is credited to water users under certain repayment contracts entered into between 1924 and 1938, incorporating the provisions of 43 U.S.C. §501.

[104] Memorandum from Acting Commissioner Lawrence F. Hancock to Regional Director, Salt Lake City, UT, December 9, 1992.

[105] Letter from Dennis B. Underwood (signed by Lawrence F. Hancock) to Honorable George Miller, October 2, 1982; Memorandum to Commissioner from Acting Assistant Commissioner-Resources Management Raymond H. Williams, April 17, 1989.

[106] Office of Inspector General, Audit Report, "Miscellaneous Revenue Collection and Distribution, Bureau of Reclamation," Report No. 92-I-887, June 1992, at p. 4.

project, which in past years has been proposed for transfer to the local water district.

Regardless of whether such miscellaneous revenues are credited properly or improperly under Reclamation law, they contribute federal dollars to offset the reimbursement requirement for irrigation projects. Thus, they result in a further reduction in water cost and a loss of potential federal income. BuRec is currently preparing new regulations to implement the recommendations of the Inspector General. The new BuRec policy will also void those contract provisions crediting miscellaneous revenues in violation of the law.

COST ALLOCATION

In order to set in place the repayment mechanisms for each Reclamation project, a detailed "cost allocation" formula must be prepared. The cost allocation takes into account the multiple purposes of the project—water supply, flood damage reduction, hydropower generation, etc.—which have varying repayment terms. For example, the portion of the project allocated for irrigation water is repaid without interest, but interest is charged on repayment of the hydropower facilities. In addition, the cost allocation must take into account the varying users of the project; irrigators pay no interest on their water supply, but municipal and industrial (M&I) water users do.

The portion of project construction costs repaid by the irrigators is determined by the Secretary of the Interior. The cost allocation will designate some construction costs as attributable to irrigation facilities, and others to M&I water supply or hydropower production. The Secretary attributes some construction costs to "non-reimbursable" project uses, like flood control, fish and wildlife or recreation. Project users do not reimburse these costs; instead they are borne entirely by the taxpayers.

Allocation and re-allocation of project costs can serve to move costs from reimbursable purposes to non-reimbursable purposes, often reducing the repayment obligation of the irrigators, and thus reducing the cost of their water.

- For example, the Grand Canyon Protection Act, enacted in 1992 as part of the Reclamation Projects Authorization and Adjustment Act, made Colorado River Storage Project costs non-reimbursable.[107] These were not direct costs incurred in construction of non-reimbursable features, but the costs of environmental studies to determine how to operate the project hydropower facilities in a manner that would protect the natural resources of the Grand Canyon. These costs were subtracted from the project repayment obligation, taking the last few "payments" off the end of the project repayment period.

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[107] Reclamation Projects Authorization and Adjustment Act of 1992, §1807, Public Law No. 102-575, 106 Stat. 9600, October 30, 1992. Senate report language suggested that the non-reimbursable costs should include the cost of replacing power generation lost from adjustments in the operations of Glen Canyon Dam.

The Colorado River Storage Project is largely repaid by power revenues, but the same principle applies to reallocation of costs away from irrigation.

- A March 1992 GAO report found that the cost allocation for the CVP was outdated, and used inappropriate methodology. Among other flaws, BuRec's cost allocation incorporated the expected cost of unbuilt project features in determining the cost allocation.[108] Since the majority of unbuilt features are *not* irrigation features, it seems likely that including the unbuilt costs in the allocation weights the total costs toward non-irrigation uses. Thus, the CVP allocation may inappropriately reduce the proportion of project costs allocated to irrigation and thus the repayment required of irrigators.[109]

OPERATIONS AND MAINTENANCE COSTS

Reclamation project users must also pay BuRec the annual operations and maintenance costs (O&M) for the project. These costs, like construction costs, are allocated among project uses, but using a different allocation formula from the construction costs. Thus, water users are required to pay for the day-to-day water delivery costs as well as capital repayment costs.

The Reclamation Project Act of 1939 requires that fees for water under water service contracts as well as repayment contracts be set at a level that recovers all O&M costs.[110] In 1982, the Reclamation Reform Act expanded that requirement to mandate that O&M be recomputed annually.[111] Before 1986, however, water service contracts for the CVP frequently set fixed water charges that paid the then-current O&M, but soon created O&M deficits as project costs inflated. The water users did not pay the deficits; these costs were added to the capital costs of the project, with repayment indefinitely deferred through rolling repayment. In 1986, in the same legislation establishing a definite repayment date for the CVP, Congress forbid future O&M deficits and required that interest be charged on any additional deficit in O&M payments.

Other policies, however, still may reduce O&M charges below the actual cost to the federal government. First, the miscellaneous revenues discussed above may be credited to O&M charges as well as project repayment. Second, the cost of power used to pump project water to the water users is set at the lowest possible rate.

Power generated from hydropower facilities at federal irrigation projects is sold at varying rates to varying users. The first priority for project power,

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[108] General Accounting Office, Report to the Chairman, Subcommittee on Water, Power and Offshore Energy Resources, Committee on Interior and Insular Affairs, House of Representatives, "Bureau of Reclamation: Central Valley Project Cost Allocation Overdue and New Method Needed," U.S. General Accounting Office, March 1992, at p. 5.

[109] In 1986, Congress ordered BuRec to update the CVP cost allocation by January 1, 1988, Act of October 27, 1986 §102, Public Law No. 99-546, 100 Stat. 3050, but that updated cost allocation has never been completed.

[110] Reclamation Project Act of 1939 §9(e), 43 U.S.C. §485h(e).

[111] Reclamation Reform Act of 1982 §208, Public Law No. 97-293, 96 Stat. 1263, 43 U.S.C. §390hh.

however, is the power necessary to operate the project itself and pump water to the irrigation districts. Many projects generate sufficient power to cover their own energy needs, and the cost of providing this power is charged against the project at the "project power rate." The project power rate includes only the marginal costs to produce the power. Neither the capital costs of power facilities nor power facility maintenance costs are included. This lower power rate can be important in reducing O&M costs for water users on projects that involve considerable uphill movement of irrigation water. For example, the Central Arizona Project must pump water almost 3,000 feet uphill before it can be delivered to the project service area.

In addition, some project water customers may form power pools that also receive the project power rate for pumping power necessary to pump water within the customers' own distribution systems. For example, many customers of the Pick-Sloan Project on the Missouri River pay this lower rate for energy to pump water within their districts. Low power rates for irrigators in the Columbia River basin are discussed below in the Hydropower section.

EXAMPLES OF IRRIGATION WATER RATES

Although it is nearly impossible to determine the total benefit derived from each of the various irrigation water pricing factors described above, some 1991 BuRec data provides insight into the overall benefits derived from the program. The following table compares the actual prices being paid for each acre-foot of irrigation water on various projects with the "full cost" price for irrigation water. "Full cost" is calculated as the cost for irrigation water if full repayment of the irrigation portion of the project, included any deferred O&M, is amortized with interest from the date of construction expenditures.

Project	District	$/af Contract Price	$/af Full Cost
CVP*	Westlands	8.00	45.79
CVP*	Broadview	3.50	30.62
CVP*	Glenn-Colusa	2.00	9.77
CAP	Central Arizona	2.00	209.49
CAP	New Magma	2.00	248.52
Pick-Sloan	Riverton Valley	0.75	8.18
Pick-Sloan	Torrington	2.80	7.27

*By contrast, irrigators receiving water from the California State Water Project may pay $100–$200 per acre-foot.

Other Reclamation Programs

Apart from benefits deriving from the delivery of irrigation water at low rates from federal projects, the federal Reclamation program provides further benefits to irrigators through Small Reclamation Project Act loans and to

urban water users through M&I water sales from federal projects. Other BuRec programs, providing federally constructed "drainage and minor construction," and loans for "rehabilitation and betterment," have been abandoned by BuRec in the last year.

The Small Reclamation Project Act provides loans through BuRec for improving or expanding existing irrigation facilities at reduced interest rates.[112] The portion of the loan expended on irrigation-related facilities is repaid at 0% interest. The portion of the loan expended on flood control benefits is not repaid at all. Only 25% of the fish and wildlife portion and 50% of the recreation portion is repaid. The maximum amount of each loan was originally set at $6.5 million of a $10 million project, but with indexing for inflation may now reach $34.2 million out of a total proposed project cost of $51.3 million. The entity constructing the project must provide a portion of the total project financing; this portion is frequently provided in-kind, by land purchases and labor.

Many federal Reclamation projects provide M&I water to urban users, in addition to their irrigation benefits. The M&I water is sold at higher rates than irrigation water because M&I users must pay interest and are not subject to the "ability to pay" discount given irrigation users. However, M&I users still benefit from other factors that may reduce water prices: low interest rates, delayed repayment, and cost allocations that reduce water prices below actual cost for construction of the water supply project.

M&I water users have also benefitted historically from water prices that failed to recover full O&M costs. In 1986, Congress mandated that interest be charged on accumulated O&M deficits on M&I water as well as irrigation water.

- The City of Fresno has opted not to pay off its O&M deficit. Instead, that debt to the government continues to accrue interest from 1986. The debt currently stands between $11 and $15 million. It will come due when Fresno's contract expires in 2006.

Exemptions From Environmental Regulation

Irrigators benefit from at least two exemptions from environmental regulation: permitting requirements under the Clean Water Act, and reporting of toxic releases under the Toxic Release Inventory (TRI).

Clean Water Act section 402 requires generally that all point sources discharging pollutants into the waters of the United States must obtain a permit and meet standards for reducing pollutant discharges.[113] Irrigation drainage ditches, however, are specifically exempted from this requirement under section 402(l)(2).[114] The value of this exemption to irrigators is unknown, although the contribution of irrigation drainwater to the pollution of U.S. waters has been partially documented by the Department of the

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[112] Public Law No. 84-984, 70 Stat. 1044, 43 U.S.C. §§422a-422j.

[113] 33 U.S.C. §1342.

[114] Ibid §1342(l)(2).

Interior.[115] Remediation to meet water quality standards and permitting standards would likely impose considerable costs on the irrigators.

Another benefit to irrigators is that farming practices are generally excluded from the list of industries required to report toxic chemical releases to the TRI.[116] Thus, irrigated farming need not report releases of toxic fertilizers and pesticides that reach the environment through aerial spraying, land application, tailwater runoff, drainage water, and groundwater recharge.

Agriculture Department Benefits

Most of the farmers who purchase subsidized irrigation water also receive support of one kind or another from various agencies of the Department of Agriculture (USDA). These benefits result from the entire array of USDA programs, except for a few programs specific to crops that are not irrigated or not grown in the western states. The following summary of these benefits includes price support (surplus crop) programs, income support programs, disaster assistance programs, conservation programs, loan programs, and pest control programs. Other more indirect benefits derive from agricultural research programs and extension services.

The inconsistency between the surplus crop program and the Reclamation program has attracted scrutiny in the past.[117] Since the Reclamation program does not control the irrigator's choice of crop, the crops grown with this subsidized water include many that have been declared in surplus by the

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[115] E.g., U.S. Fish and Wildlife Service, Division of Environmental Contaminants, "An Overview of Irrigation Drainwater Techniques, Impacts on Fish and Wildlife Resources, and Management Options," May 1992; U.S. Geological Survey, U.S. Fish and Wildlife Service, Bureau of Reclamation, Bureau of Indian Affairs, "Detailed Study of Selenium and Selected Elements in Water, Bottom Sediment, and Biota Associated with Irrigation Drainage in the Middle Green River Basin, Utah, 1988-90," U.S. Geological Survey Water-Resources Investigation Report 92-4084, 1992.

[116] See discussion of TRI *supra* pp. 38-39.

[117] One study in 1988 looked at the overlap in subsidies between Reclamation and program crop payments. Federally irrigated program crops received $496 million in program payments and $85 million in irrigation subsidies in 1986, though the level of water subsidy was limited in the analysis to the difference between water contract prices and "full cost" prices. Michael R. Moore & Catherine A. McGuckin, "Program Crop Production and Federal Irrigation Water," U.S. Department of Agriculture, Economic Research Service, *Agricultural Resources: Cropland, Water, and Conservation Situation and Outlook Report*, No. AR-12, September 1988, at p. 45.

Secretary of Agriculture. In 1991, Reclamation water supported a not insignificant portion of the national production of some of these crops, notably barley, rice and upland cotton:

Crop	Unit	U.S. Production (in thousands)	Reclamation Production (in thousands)	%
Corn	bu	7,475,480	102,162	1.4
Sorghum	bu	584,860	2,474	.4
Oats	bu	243,451	5,844	2.4
Barley	bu	464,326	41,682	9.0
Wheat	bu	1,372,617	45,418	3.3
Rice	cwt	157,457	13,797	8.8
Upland Cotton	bale	17,614	1,518	8.6

These crops are frequently referred to as "subsidized," because they are included in USDA income and price support programs discussed below. In addition, acreage reduction programs support lower production and higher prices. It has been noted that the BuRec expenditures to provide subsidized water for these crops undercut the USDA expenditures to reduce production.[118] A 1992 GAO study observed a further inconsistency, in that irrigators may grow surplus crops on federal land at low land leasing rates. Some farmers even received USDA support payments in exchange for *not* growing these crops on federal land that they lease.[119]

Once a farmer reduces acreage of designated surplus crops by an annually determined amount (e.g., in 1994 cotton producers must reduce cotton acreage by 10%), and meets certain environmental standards, that farmer qualifies for USDA's price support and income support programs. Price supports also apply to some non-surplus crops that do not qualify for income support. Again, these programs overlap with the benefits irrigators already receive from the Reclamation program.

For the price support program, the farmer can receive a non-recourse loan from the federal government, calculated on the basis of a "price support" price for the anticipated crop. When the crop is harvested the farmer may choose to repay the loan or turn the crop over to the government,

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[118] Office of Inspector General, Audit Report, "Irrigation and Crop Subsidy Programs: Bureau of Reclamation," Report No. 90-106, September 1990; "To Amend the Reclamation Projects Act of 1939," Hearing before the Subcommittee on Water and Power Resources, Committee on Interior and Insular Affairs, 101st Congress, 1st Session, Serial No. 100-40, May 12, 1987.

[119] General Accounting Office, Report to the Chairman, Government Information, Justice, and Agriculture Subcommittee, Committee on Government Operations, "Commodity Programs: Should Farmers Grow Income-Supported Crops on Federal Land?" GAO/RCED-92-54, January 1992.

guaranteeing repayment of the loan at the minimum "price support" level, even if the market price falls below that level.

In addition, each year USDA sets a "target price" to implement the income support program for each crop. Farmers growing program crops are entitled to income support through a "deficiency payment" equal to the difference between the target price and the actual market price for the crop.[120] The deficiency payment for all crops is capped at $50,000 per person, plus two $25,000 caps for two separate corporate farm shareholdings, giving a maximum of $100,000. Irrigation subsidies are not included in the payment cap.

Disaster assistance programs provide further direct payments to producers, for crop losses due to weather. In order to qualify for payments, the farmer must have lost at least 35% of the crop. Disaster assistance payments are equal to 65% of the target price for the crop, capped at $100,000. A farmer may not receive both deficiency payments and disaster payments for the same portion of a crop, but may receive a refund of deficiency payments in order to be eligible for higher disaster assistance payments. Under a separate tree assistance program, USDA will provide 35% of the cost of replanting trees destroyed by weather-related damage. Again, irrigation subsidies are not considered in determining eligibility for these programs.

USDA runs separate irrigation conservation programs implemented through the Agricultural Stabilization and Conservation Service. A "conservation cost share" program and the Colorado River Salinity Control Program provide federal contributions to improve efficiency in existing irrigation systems. Although the federal contribution to such improvements varies by irrigation practice and location, it averages about 50% of the cost of the improvements. A separate "conservation technical assistance program" provides specialists to assist farmers in developing irrigation management plans and improve water efficiency. Both these programs are available only for improving efficiency of existing systems; no irrigation expansion may be included.

The Farmers Home Administration (FmHA) administers a number of loan programs that support farmers by providing low-interest non-recourse loans. In addition to the low interest rates, farmers often benefit from the agency's failure to pursue unpaid loans. According to news reports, FmHA writes off an average of $2.3 billion in uncollectible loans annually.[121] In the past five years, the agency has written off $11.5 billion, and continues to carry another $5 billion in delinquent loans on its books.[122] In FY88 and FY89, the agency had total operating losses of $20.7 billion, with $2.8 billion

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[120] If the market price falls below the price support level, then the deficiency payment is equal to the difference between the price support level and the market price, subject, however, to a small discount for deficit reduction.

[121] "Agency Fails to Collect Millions in Loans to Wealthy Farm Owners," *The Washington Post*, January 28, 1994, at p. A1. Also, see generally "Decade of Decline," at pp. 23-27.

[122] "Agency Fails to Collect Millions in Loans to Wealthy Farm Owners," *The Washington Post*, January 28, 1994, at p. A1.

of uncollectible loans written off in FY89.[123] Despite Congressional concern expressed in 1981 over multi-million dollar delinquencies in "emergency loans,"[124] many of these delinquencies have not yet been recovered.[125]

USDA operates numerous disease, pest and animal damage control programs under the aegis of the Animal and Plant Health Inspection Service. Animal damage control programs provide protection from specific animal damage to specific crops; for example, blackbird control assists rice farmers. Similarly, pest and disease control focuses on specific threats to specific crops. Many programs operate only in response to local requests and require state and local cost-sharing; however, certain plant protection programs represent ongoing federal responses to economic threats, such as the Medfly, boll weevil, and gypsy moth. Agricultural quarantine and inspection are included within these plant protection programs.

Numerous other USDA programs provide assistance to farmers. Among these, the Great Plains Conservation Program assists in range improvement and cropping management on highly erodible land in 10 Great Plains states. The Soil Conservation Service small watershed program assists with flood control and erosion prevention. Soil Conservation Service soil surveys and snow surveys give information and planning assistance to farmers, as well as direct assistance to BuRec in managing the Reclamation program. Research funded through the agricultural extension service often provides significant support, such as the development of the tomato harvester.

Federal Navigation Systems

In addition to the water supply, flood damage reduction, and other benefits described above, major federal water projects often include a component devoted to navigation assistance on major waterways. The cost of BuRec and U.S. Army Corps of Engineers projects that is allocated to navigation assistance is not considered reimbursable to the government by project users. Although the transportation benefits from these projects are not provided exclusively to shippers of agricultural products, grain shipping is frequently the major benefit used to justify the projects, as well as the major beneficiary of the projects once they are built.

The value of federal navigation systems to transport crops grown with BuRec irrigation water is particularly noteworthy in the Missouri/Mississippi River system and in the Columbia River Basin.

- Grain shipments amounted to 80% of shipments out of the four Lower Snake River reservoirs in the upper reaches of

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[123] General Accounting Office, Report to the Secretary of Agriculture, "Financial Audit: Farmers Home Administration's Financial Statement for 1989 and 1988," GAO/AFMD-91-36, May 1991, at pp. 2 and 9.

[124] "Agriculture, Rural Development and Related Agencies Appropriations for 1982," Hearings before a Subcommittee, Committee on Appropriations, House of Representatives, 97th Congress, 1st Session, Part 5, at pp. 871-874.

[125] Letter from Administrator Michael V. Dunn to Honorable George Miller, May 13, 1994. Unfortunately, Administrator Dunn's letter did not supply information requested by the Chairman, making analysis of the FmHA loan programs more difficult.

> the Columbia Basin transportation system.[126] These shipments paid nothing toward the cost of those four projects that was allocated to navigation. However, these grain shipments benefit from navigational facilities through the lower Basin as well. The total navigational allocation for the facilities that these grain shipments use is $426,721,000.[127] A new lock on the Bonneville Dam will raise this total to $591,221,000.[128]

Although committee staff could not determine what proportion of the grain passing through this transportation system was grown using federal irrigation water, there is substantial use of Reclamation water for grain production in the Basin.[129]

WHO GETS THE BENEFITS?

Reclamation water is currently delivered to 1,468 irrigation customers—mostly irrigation or water districts. These districts then resell the water to farmers within their districts and within authorized project boundaries. Currently, more than 137,000 farms receive Reclamation water.

Of those receiving water from BuRec, an unknown number receive benefits from other federal programs. Agency staffs were unable to provide any information regarding overlaps between Reclamation and USDA programs, since such information is rarely required of the recipients. Even in programs where USDA has attempted to eliminate overlaps, the guidelines may still not be followed.[130] Developing information on program overlaps would be difficult without self-reporting, since farmers often use different corporate names for different programs.

Determining who receives benefits from BuRec irrigation water and overlapping programs is also difficult because many of the programs have been abused by unqualified recipients. The discussion below addresses both the range of subsidy recipients and the abuses of various program.

Acreage Limits

Certain large agribusinesses have historically abused the restrictions on the size of farms that may receive BuRec irrigation water. Because it was originally intended to assist family farmers, the law limits the number of acres of each farm receiving Reclamation water. Originally, the acreage limit was set at 160 acres,[131] but BuRec often interpreted the limit in a loose

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[126] U.S. Army Corps of Engineers, 1992 Columbia River Salmon Flow Measures Options Analysis/EIS, at pp. 4-122 and G-6 (shipments of wheat and barley through first four dams total 3,210,373 tons, and the cumulative total navigation tonnage through those dams is 4,024,909).

[127] Bonneville Power Administration, Financial Summary 1991, at pp. 34-35.

[128] "The Great Waterway 1992: The Columbia Snake River System," Marine Publishing, Seattle, Washington, at p. 53.

[129] Bureau of Reclamation, "Water Land and Related Data, Summary Statistics 1991," at pp. 129-163.

[130] "Decade of Decline," at pp. 24-25.

[131] More than 160 acres could be irrigated if the land was of poorer quality; the test was (continued...)

fashion, permitting a husband and wife to own 320 acres and allowing an unlimited amount of leased land to be added to the 160-acre farm ownership receiving cheap water.

In 1982, Congress attempted to remedy these abuses by passing the Reclamation Reform Act of 1982. The Reform Act acknowledged the existence of the larger farms and expanded the qualified farm to 960 acres, but tightened up the definition of a single farm. All lands operated as a single farming unit were to be counted into the 960-acre limit by 1987. Congress adopted further refinements to close potential loopholes in the acreage limit in 1987.[132]

Unfortunately, BuRec's enforcement of the Reform Act was often selective. Further, large agribusinesses receiving Reclamation water again found loopholes in BuRec's loose interpretation of the Reform Act. Huge farms were reorganized into interconnected farm corporations and trusts, operated together but having a single owner. In some cases, these paper reorganizations existed only for Reclamation purposes; on loan applications and USDA forms, they still operated as a single farm. Although farm ownerships have changed since, a 1988 analysis found the following farming "clusters" in the Central Valley of California:

- Woolf Farming Co. irrigated more than 9,000 acres in a single district in 1985. By 1987, eight interconnected partnerships and corporations having the same principals irrigated more than 10,000 acres. All the water users obtained a single state pesticide use permit, and land from several of the entities was joined as collateral for a single farm loan.[133]
- Vasto Valley Farms, Inc. was replaced with seven farms (called Anderson Farms I, Anderson Farms II, etc., through VII), irrigating more than 7,500 acres. The farms were registered as a single entity with the Agricultural Stabilization and Conservation Service, and applied together for loans.[134]
- The restructuring of Perez Ranches produced 10 separate farms, having a single address and registration with USDA.[135]

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[131](...continued)
whether it was "equivalent" to the most productive land. This land equivalency test provides an incentive to irrigate *more* of poorer quality farmland.

[132] Omnibus Budget Reconciliation Act of 1987 §5302, Public Law No. 100-203, 101 Stat. 1330-268, 43 U.S.C. §§390nn, 390ww.

[133] Don Villarejo and Judith Redmond, "Missed Opportunities—Squandered Resources: Why Prosperity Brought by Water Doesn't Trickle-Down in the California Central Valley," California Institute for Rural Studies, Davis, California, 1988, at pp. 28-29.

[134] Ibid at pp. 30-34.

[135] Ibid at pp. 35-36.

Although the vast majority of Reclamation irrigators legitimately farm within the acreage limits, several other clusters were found by the study above and by the General Accounting Office.[136]

Continued litigation over the application of the Reform Act's acreage limits kept the status of the larger water users in flux until recently. BuRec is currently re-writing its acreage limitation rules. In the meantime, since 1987 BuRec has approved as eligible for water deliveries forty-two trusts holding more than 960 acres each.

Illegal Water Use

Other forms of illegal water use include application of water outside project boundaries or to lands classified as "non-irrigable," or use of irrigation water for municipal and industrial (M&I) purposes. As the West has urbanized and irrigation practices have become more efficient, these uses have become common in some areas. This range of illegal water uses is often known as "water spreading."

In the Pacific Northwest, there is a substantial amount of application of water outside project boundaries and on non-irrigable lands. For many years BuRec ignored or even encouraged these practices, since much of the water had become available due to improved on-farm efficiencies.

- For the Westlands Irrigation District on the Umatilla Project in Oregon, this excess water became a profit center, as the cheap federal water was resold to the Teel Irrigation District—outside project boundaries—at a profit. Westlands thus effectively captured the federal irrigation subsidy as cash income. BuRec has now stopped this practice and convened a task force to address the problem of irrigation of ineligible lands.

In California and Idaho, urbanization has led to more and more use of project water sold at subsidized irrigation water rates for M&I purposes, and of Reclamation drainage systems for urban run-off. Again, this effectively provides a cash profit to the user, who keeps the difference between irrigation water costs and M&I prices. When BuRec fails to monitor water use patterns, the government loses the opportunity to charge for this water at more realistic M&I water rates.

Qualification for Small Reclamation Project Loans

The recipients of Small Reclamation Project Act loans have also extended qualification for this program beyond its original intent. The program is intended to provide low-cost loans to only those projects that have irrigation benefits. Needs have changed over time, so that most of the projects now built with these loans have multiple purposes; in some cases, it appears that irrigation has been added as a project purpose only to obtain the federal benefit. Of the eight projects currently under consideration for these loans,

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[136] General Accounting Office, Report to the Chairman, Subcommittee on Water, Power and Offshore Energy Resources, Committee on Interior & Insular Affairs, House of Representatives, "Water Subsidies: Basic Changes Needed to Avoid Abuse of the 960-Acre Limit," GAO/RCED-90-6, October 1989.

on average only 44% of the investment will go to irrigation. In other recent cases, authorized projects have included only a minimal irrigation component:

Galesville Project, OR	9%
Garland Project, WY	7%
Upper Yampa (Stagecoach), CO	3%
Temescal Project, CA	15%
City of Ft. Collins (Joe Wright), CO	10%

BuRec is currently revising the program in an attempt to eliminate these abuses.

Water Transfers

As with other federal subsidies, the question of who benefits from Reclamation water subsidies is complicated by potential resale of the water or transfer of the subsidy. Profitable water transfers can be beneficial, for they provide an incentive for water conservation. They also tend to move water from less valuable agricultural uses to more valuable urban use and fish and wildlife habitat. In providing for water transfers, however, the government is faced with the conflict between encouraging transfers to more valuable uses and allowing the subsidized irrigator a windfall profit from the transfer price.

Under Reclamation law, water may not be resold. In fact, upon entering into a repayment contract the contractor is required to pay for the water whether or not it is used. Thus, the water is devoted to a single purpose for up to 40 years. As described above, the restriction on water transfers has often been abused.

In addition, a major exception to this rule was included in recent reform legislation for the Central Valley Project in California, which allows irrigators to take some profit from water transfers.[137] Such loosening of the water transfer restrictions should allow water uses to change with changing needs in the increasingly urbanized West.

In one case, BuRec itself has implemented a water transfer authorized by Congress at significant profit to the water users. In order to obtain water necessary to meet the terms of an Indian water rights settlement, the government repurchased the remaining term of its 40-year contract with the Harquahala Valley Irrigation District in Arizona. Although all parties acknowledged that the irrigation district could not afford to continue irrigating with the Reclamation water, the irrigation district claimed that the loss of the water was a significant injury. They persuaded BuRec to pay $1050 per acre-

[137] Reclamation Projects Authorization and Adjustment Act of 1992 §3405, Public Law No. 102-575, 106 Stat. 9600, October 30, 1992.

foot for the right to the water, in addition to simply cancelling the contract. The Interior Inspector General found this bargain overly generous.[138]

Agricultural Programs

Various restrictions apply to the receipt of agricultural subsidies. As discussed above, there are caps on the total amount of money that can be received for deficiency and disaster payments. These caps can be evaded by assigning some portion of the crop to a different family member, who is then subject to a separate cap. In addition, farm owners who might exceed the payment cap can lease a portion of the farm to an unrelated operator, but realize much of the value of the subsidy in the higher lease price charged for subsidy-eligible land.

Furthermore, eligibility for most USDA benefits is dependent on following the Sodbuster and Swampbuster restrictions of the 1985 and 1990 Farm Bills. These environmental restrictions prevent new conversion of wetlands and highly erodible lands to cropland, by prohibiting agricultural benefits to a farmer who converts these lands into new production.

A recent report by the Congressional Research Service evaluates the distribution of deficiency payments.[139] The report concludes that "Large and high-income producers received a disproportionately large share of program benefits."[140] It also confirmed the conclusion discussed in note 94 above, that the program supports are quickly capitalized into farm value. Thus, it would appear that the larger farms receiving Reclamation irrigation water are receiving not only an unjustified irrigation subsidy, but also a disproportionate share of farm program payments.

Recent computer analysis by the Environmental Working Group based on USDA data shows that disaster assistance payments each go to the same

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[138] Office of Inspector General, Audit Report, "Acquisition of the Harquahala Valley Irrigation District's Water Allocation, Central Arizona Project, Bureau of Reclamation," Report No. 94-I-424, March 1994.

[139] Paul W. Barkley, Congressional Research Service, "Farm Commodity Deficiency Payments: Where and to Whom?" 94-434 ENR, May 18, 1994.

[140] Ibid at p. 7. The report also provides information on the type of operators receiving payments, and where the payments are made. Most payments actually stay within the state where the eligible farm is located. Ibid at p. 24.

farmers year after year. By evaluating data for the 17 Reclamation states, committee staff analysis shows how frequently each farmer received disaster assistance in the years from 1987 through 1993.[141]

Frequency of Payments	Number of Farmers
1 out of 7 years	220,167
2 out of 7 years	138,401
3 out of 7 years	86,661
4 out of 7 years	46,310
5 out of 7 years	18,395
6 out of 7 years	4,580
7 out of 7 years	796

Thus, the program does not distribute benefits evenly; certain farmers receive payments for "disasters" year after year, making the federal government's disaster program a permanent source of support for their business. Tens of thousands receive disaster payments more than half the time (at least four out of seven years). Some of these disaster payments go to dryland farmers in the midwest Reclamation states—again, it is impossible to determine the extent of overlap with Reclamation subsidies because no agency requires that information.

Capitalization of the Subsidy

The question of who benefits from federal subsidies for irrigators is complicated by the fact that eligibility for subsidies generally increases farm land values. Thus, the subsidies are capitalized into the value of the farm, and subsequent purchasers of the land receive a reduced benefit from the subsidy because they have paid more for the farm. The original recipient pockets the difference as a direct cash recovery of the subsidy. The original recipient may also realize this cash value through farm leases rather than outright sales.

In the Reclamation Reform Act of 1982, Congress recognized that owners of excess irrigated acreage might reap a windfall profit in the sale of their subsidy along with the excess land. The Reform Act required that excess land sales be executed at a price that reflected the value of the land *without* the subsidy. Agriculture Department crop program and disaster program subsidies provide similar benefits; a recent calculation estimated that these programs added close to $100 billion to the value of farmland nationwide.[142]

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[141] Information from Ken Cook, Environmental Working Group, Washington, DC 1994.

[142] See *supra* note 94.

HYDROPOWER

Many federal water projects generate hydroelectric power as well as providing irrigation water, flood control, and many other benefits. Project operations have the first priority for use of this power. Hydropower generation that exceeds project operating requirements is sold to other power users at a rate sufficient to cover a portion of the project costs allocated to hydropower, plus interest.

Hydropower is a renewable energy resource that contributes to national energy independence and reduced reliance on imported oil and gas. These benefits, however, are not without cost; the dams producing federal hydropower have numerous impacts described in the discussion above on Irrigation Water, plus additional in-river impacts resulting from turbine operations and variable water flows due to fluctuating energy demand. In addition, pricing federal hydropower below market rates may discourage energy conservation.[143] Congress has addressed this problem in part by requiring some western federal power customers to invest in all cost-effective energy efficiency measures when they meet new demand for electricity.[144]

This report addresses only the federal hydropower generated in the 17 Reclamation states,[145] which is sold by two of the six federal power marketing agencies.[146]

- In most of the Reclamation states, federal hydropower is sold by the Western Area Power Administration (WAPA) under the general terms of Reclamation law and individual project authorizations.
- In the Columbia River Basin, federal power constitutes a higher proportion of total regional power supplies, and is sold by the Bonneville Power Administration (BPA). Under the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Planning Act),[147] BPA has more extensive responsibilities as a regional energy manager. In addition, the federal power supplies sold by BPA come from more just than hydropower

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[143] Low power rates for irrigation pumping power also reduce the price of irrigation water and thus discourage water conservation.

[144] Energy Policy Act of 1992 §114, 42 U.S.C. §§7275–7276.

[145] See *supra* note 88.

[146] The other federal power agencies are the Alaska Power Administration, the Southeastern Power Administration, the Southwestern Power Administration, and the Tennessee Valley Authority.

[147] Public Law No. 96-501, 94 Stat. 2697, 16 U.S.C. §§839–839h.

facilities: most notably, a portion of the output of the WNP-2 nuclear power plant.

WHAT ARE THE BENEFITS?

There are various ways to analyze the federal benefits to hydropower purchasers; as discussed in the Introduction above, subsidies may be found where income from the resource does not cover the government's costs, or where the price of the resource does not equal comparable market prices. Certain factors reduce the cost of hydropower below the federal government's cost of generation and sale. From the other perspective, virtually all federal hydropower is sold at prices lower than generally prevailing market rates.

A 1992 report from the Department of Energy's Energy Information Administration calculated the estimated subsidy value from these two different perspectives on federal hydropower sales nationwide. This report concluded that the "subsidy at historic cost with full cost recovery" was $1.232 billion for BPA and $505 million for WAPA in 1990.[148] The "subsidy at estimated market price of electricity" was $213 million for BPA and $1.205 billion for WAPA.[149]

Recently, the gap between the price of federal hydropower and market rates has narrowed in certain areas where the price of federal power has increased due to various factors and the wholesale price of electricity has gone down due to low natural gas prices. For example, power from the Central Valley Project (CVP) is currently priced at about 3.1 cents per kilowatt-hour,[150] while power from natural gas is available in the wholesale market for the same region at 3.5 cents per kilowatt-hour.[151]

Pricing Below Historic Cost[152]

The first factor contributing to the failure to recover the federal government's full cost of the hydropower system is the low interest rates charged for federal repayment. While hydropower sales, in contrast with irrigation water sales from the same projects, are required to recover interest on federal capital investment, the interest frequently is not high enough to recover federal costs. In the absence of special legislation, the rate is set at federal government's long-term cost of borrowing money. For some older projects that interest rate is much lower than currently prevailing market rates. In addition, special provisions in many project authorizations have set even lower rates.

The impact of low interest rates may be compounded by extremely long repayment periods. As with water, the term for project repayment can be

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[148] Energy Information Administration, "Federal Energy Subsidies: Direct and Indirect Interventions in Energy Markets," SR/EMEU/92-02, November 1992, at p. 65.

[149] Ibid at p. 62.

[150] Western Area Power Administration, 1993 Annual Report, "Ideas That Work," at p. 39.

[151] "Western Area Power Administration Power Allocation," Hearing before the Subcommittee on Oversight and Investigations, Committee on Natural Resources, June 16, 1994 (testimony of Ms. Jan Schori, Manager, Sacramento Municipal Utility District).

[152] The various factors contributing to pricing federal power below historic cost are also discussed in General Accounting Office, Briefing Report to the Honorable Howard M. Metzenbaum, United States Senate, "Federal Electric Power: Pricing Alternatives for Power Marketed by the Department of Energy," GAO/RCED-86-186BR, September 1986.

extended until all project units are complete, even though certain units may have been generating power for many years. Power repayment for the Central Valley Project has been extended into the 2030s, and could be extended further if additional project units are constructed.

The problem of repayment is also influenced by the fact that federal water projects are not required to amortize capital cost recovery over the repayment period. Rather than mandating that a certain amount of the capital and interest be repaid each year, federal law simply requires that the entire project be repaid by a given date. This allows power purchasers to benefit from policies of zero repayment in low water years, with capital costs repaid only in years when water flows are high and repayment may come from surplus power sales. WAPA repayment has generally fallen behind an even amortization schedule. Since 1984, power purchasers in the Columbia Basin have not received this benefit, as BPA has set power rates high enough to recover both principal and interest, regardless of water conditions.

In addition, the lack of amortization means that the power marketing agencies can decide which portion of the project debt to pay off first. Various parts of the debt bear varying interest rates, depending on the terms of legislation or the times of construction. The power marketing agencies generally choose to act as capital borrowers (like their customers) rather than as capital lenders (like the government), and allocate capital repayment to the highest-interest portion of the project first. By repaying the highest interest bearing capital first, the agencies lower the interest costs to the power purchasers more quickly than if capital repayment were allocated evenly across all capital accounts.[153]

Federal hydropower purchasers may also receive the benefit of cost allocations discussed in the Irrigation Water section above. To the extent that project costs are allocated to non-reimbursable project purposes, such as navigation, fish and wildlife and recreation, power purchasers take no role in repaying that proportion of the projects. In addition, older cost allocations may not reflect the current benefits of the project. As discussed above in the case of the CVP, cost allocations may also be based on the benefits of unbuilt project features, distorting the relative benefits of current project assets. These distortions may increase or decrease the allocation to power features, and thus adjust power prices either up or down.

- The Inspector General of the Department of the Interior recently noted that about 1/4 of the investment for power-related features of the Pick-Sloan Missouri River Basin system has been allocated by law to irrigation features that BuRec does not anticipate ever building. The Inspector General's report found that until these costs are made the responsibility of the power users, "taxpayers will continue to incur $2 million of annual operation and maintenance costs that should be borne by the power users and $30

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[153] To the extent that capital allocated to the irrigation portion of water projects is transferred to the power purchasers (see discussion of "ability to pay" in Irrigation Water section above), it still carries 0% interest on repayment. Typically, it is scheduled to be repaid last—sometimes more than 100 years after the original federal capital was expended.

million in annual interests costs to finance the $382 million of costs assigned to future irrigation development."[154]

Where project costs are transferred from irrigators to power users under the "ability to pay" provision of Reclamation law,[155] the other benefits of federal hydropower are offset by this reallocation. However, the eventual repayment of the irrigators' 0% debt never rises to a level that offsets the other subsidy factors for federal power purchasers.

Pricing Below Market

Rather than examining federal cost repayment, benefits to power users may be evaluated in comparison to equivalent market prices for power in the project region. Despite some recent narrowing in the market, federal power remains close to the least expensive power in any region of the country. The only power resource that is often less expensive is older hydroelectric facilities constructed by both investor- and publicly-owned utilities under long-term licenses from the Federal Energy Regulatory Commission.

- WAPA sells power from the projects coordinated by its Loveland Area Office in Colorado at 2 cents per kilowatt-hour,[156] while new resources cost only about 3 cents per kilowatt-hour.[157]
- Power from the Pick-Sloan Project costs as little as 1.2 cents per kilowatt-hour,[158] while new resources in the Missouri Basin cost about 3 cents per kilowatt-hour.[159]

One factor that contributes to low prices and high demand for federal power is that the power marketing agencies do not manage power demand through pricing. Hydropower is an important resource to meet daily peaks in energy demand,[160] because the amount of power generated can change rapidly by altering flow through turbines. Many utilities and state utility commissions try to manage peak energy demand by pricing power higher during peak periods; the power marketing agencies do not. Higher prices

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[154] Memorandum from the Acting Inspector General, Office of Inspector General, U.S. Department of the Interior to the Secretary, Final Audit Report for Your Information, "Pick-Sloan Missouri Basin Program Cost Allocation, Bureau of Reclamation," No. 93-I-1641, October 18, 1993.

[155] See discussion of "Ability to Pay" above in section on Irrigation Water.

[156] Western Area Power Administration, 1993 Annual Report, "Ideas That Work," at p. 39.

[157] "Western Area Power Administration Power Allocation," Hearing before the Subcommittee on Oversight and Investigations, Committee on Natural Resources, June 16, 1994 (testimony of Mr. James Henderson, Loveland Area Customer Association).

[158] Western Area Power Administration, 1993 Annual Report, "Ideas That Work," at p. 39.

[159] "Western Area Power Administration Power Allocation," Hearing before the Subcommittee on Oversight and Investigations, Committee on Natural Resources, June 16, 1994 (testimony of Mr. Tom Heller, Missouri Basin Municipal Power Agency).

[160] Peaks in energy demand are universal, as power use drops off dramatically in the middle of the night. Some areas have a morning as well as an afternoon daily peak, and regions vary as to whether their seasonal peaks occur for heating in cold winters or for air conditioning in hot summers.

occur during peak demand periods only occasionally—when the power marketing agencies have to purchase power on the market to meet the terms of their firm contracts. Since low-priced federal power is often available during periods of highest demand, it offers an even greater subsidy as well as a deterrent to peak energy conservation.

Rural Electrification

Under the separate laws governing rural electric cooperatives, these entities receive specific benefits that supplement the general benefits received by all purchasers of public power. In addition to purchasing public power, these entities receive loans from the Rural Electrification Administration at below-market rates.[161] They also receive loan guarantees from the agency for generation and transmission cooperatives (typically owned by several distribution cooperatives) at the long-term federal debt rate.

WHO GETS THE BENEFITS?

The bulk of federal power is sold under long-term contracts for guaranteed amounts of power production. These contracts are generally executed on a project-by-project basis, usually every fifteen years. Thus, the distribution of federal power supplies at each renewal date guarantees the benefits of federal power sales to a given group of purchasers for many years.

A variety of governmental entities operating at the federal, state and local level receive a priority right to purchase power from federal hydropower projects. This priority is generally referred to as the "public power preference." There are no statutory limits on who may buy federal power that is not used by these public power entities.

The public power preference arises from language of the Reclamation Project Act of 1939 and individual project authorizations. Although the language varies from statute to statute, it generally refers to disposal of federal hydropower in a manner that will "encourage widespread use" at the "lowest possible rates" consistent with "sound business principles." The preference is stated in terms such as use for "public purposes" or "Federal Agencies, public bodies, and cooperatives," or, in the 1939 Act, "municipalities and other public corporations and agencies . . . cooperatives and other nonprofit organizations financed in whole or in part by loans made pursuant to the Rural Electrification Act of 1936 and any amendments thereof."[162]

Due to the below-market price of federal hydropower, public entities generally purchase all of the firm power for which WAPA offers them a first priority. Many of these entities are municipalities or local utility districts that in turn sell the power at retail to regional customers. Although the public power utilities have a full range of customer types, they tend to be more rural than the customers of privately-owned, state-regulated utilities.[163] In

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[161] Rural Electrification Act of 1936, 7 U.S.C. §901 et seq.

[162] Reclamation Project Act of 1939 §9(c), 43 U.S.C. §485h(c).

[163] Historically, the private utilities were generally unwilling to provide service in rural areas because of the high cost of extending service to areas with low customer density.

addition, they often provide special low power rates to industrial customers in their service area, such as hardrock mines in Nevada.

Among public power entities, relative priority to purchase WAPA power is rarely designated by legislation. In determining which entities will receive the limited federal firm power, however, WAPA usually gives a priority to entities that have previously purchased that power. Contracts for firm power are generally renewed every 15 years.

BPA's larger presence in the Northwest's regional energy market and separate authorization under the Northwest Power Planning Act give rise to a broader set of federal hydropower customers in that region. BPA still sells a large proportion of its power to public power entities. However, BPA is also required to provide the benefits of firm federal power resources to the residential and farm customers of investor-owned utilities under the "residential exchange" provision of the Northwest Power Planning Act.[164] In addition, several specific entities receive price breaks on BPA power. These special groups of BPA customers are discussed in more detail in the recent committee staff report: "BPA at a Crossroads."[165]

As discussed above in the section on Mineral Resources, the Northwest Power Planning Act allows BPA to establish a special rate for "any direct service industrial customer using raw minerals indigenous to the region as its primary resource."[166] This provision benefits a single nickel mine and smelter in Oregon. In addition, BPA has established special low rates for two particular groups of customers: the "direct service industries" (DSIs) and regional irrigators.

The DSIs are a group of large industrial customers—mostly aluminum plants—that receive power directly from BPA without a utility intermediary. These customers receive special low rates from BPA. The benefits to the DSIs from the low rates are offset by contract terms that allow BPA to partially curtail power deliveries when necessary, and by the fact that the DSIs take power at night.

BPA benefits from the DSIs' nighttime consumption, when consumer power demand is low but hydropower generation must be sustained due to minimum river flow requirements. It is not clear, however, that the DSI rates are fully justified by these benefits. One analyst has calculated that the cost of serving the DSIs exceeded income from these entities by $1 billion over FY86-FY95, based on BPA's annual Wholesale Power Rate Development Studies.[167] More conservative calculations, relying on the same BPA data but eliminating the year when no BPA figures were calculated, reduce the total to $935 million.

As discussed in the Irrigation Water section above, BuRec water customers receive low power rates for the Bureau of Reclamation's water pumping costs.

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[164] Northwest Power Planning Act §5(c)(2), 16 U.S.C. §839c(c)(2).

[165] Majority Staff Report, Task Force on the Bonneville Power Administration, Committee on Natural Resources, Committee Print No. 7, 103d Congress, 2d Session, May 1994.

[166] Northwest Power Planning Act §7(d)(2), 16 U.S.C. §839e(d)(2).

[167] Columbia Research Corporation, "Why Preference Customers Care about the DSIs: An Issue Paper," May 1994, at p. 3.

- For BuRec's Columbia Basin Project, water pumping power costs less than one twenty-eighth of the rate for preference customers.[168] Since the water districts have taken over management of the project, they have added low-head hydropower facilities to the water canals. The cheap energy used to pump water into the canals is then used in part for the districts' hydropower generation, which the irrigators sell at a substantial profit.[169] This practice reduces water conservation incentives even further than do the low water and power costs; every drop of water added to the canals provides more profit to the districts.

In addition, northwest regional irrigators also have separate low-cost contracts with BPA for their own water pumping power.

All of the above entities purchase "firm power" from WAPA and BPA—power delivered under contracts that guarantee that certain amounts of capacity will be available when necessary, and that certain amounts of total energy will be available over a period of time. Additional power is sold by the power marketing agencies when there is sufficient water in the hydropower system to generate more power. Certain entities may have a long term priority right to these surpluses, but much surplus power is sold on an extremely short-term basis. The surplus power is sold at market rates, and the range of customers is far greater; much WAPA surplus power is auctioned off to investor-owned utilities as well as public power entities.

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[168] "BPA at a Crossroads," Majority Staff Report of the Task Force on the Bonneville Power Administration, Committee on Natural Resources, Committee Print No. 7, 103d Congress, 2d Session, May 1994, at p. 21.

[169] "Water Use Practices on Bureau of Reclamation Projects," Hearing before the Subcommittee on Oversight and Investigations, Committee on Natural Resources, 103d Congress, 2d Session, Serial No. 103-101, July 19, 1994 (prepared statement of Mr. William Bean, Columbia Basin Institute, at p. 8 of statement).

TIMBER

The U.S. Forest Service and Bureau of Land Management (BLM) are the two principal agencies that sell federal timber resources.[170] Both agencies are required under various authorizing statutes to recover at least the market value or appraised value of timber upon sale. In addition, nearly all Forest Service and BLM timber is required to be sold on a "multiple use/sustained yield" basis—to allow multiple use of various land resources like timber, forage and recreation, along with sustained yield of each individual resource. The prominent exception to this rule is the "O&C lands" of western Oregon, where timber production is specified as the "dominant use" of the land.[171]

Like other natural resources, use of federal timber contributes substantially to local economies. Trees have an advantage over minerals in sustaining local economies, because trees can give "sustained yield," growing back in most areas within a reasonably finite period. The negative impacts of forest harvests, however, can be far greater than the obvious loss of scenic forest vistas. Destruction of late successional/old growth forests, which are among the most valuable for timber because they yield large, even-grained lumber, can destroy associated old growth ecosystem-dependent species. More than 1,000 species were found "closely associated" with "old growth" forest ecosystems in the Pacific Northwest, with many of these at risk of extinction.[172] Replanting trees may not be sufficient to restore lost ecosystems, and reforestation success rates are uneven and difficult to verify. In addition, careless logging practices and logging road construction can destroy fisheries and degrade water quality by clogging clear mountain streams with silt. The loss of fisheries damages an important local industry, impairs recreational activity, and creates a conflict with Indian tribes that possess treaty fishing rights.

Estimating the benefits provided by federal timber sale policies can be difficult because timber values may vary greatly from sale to sale. Federal timber resources range in type, value and quality across the nation. For example, the Forest Service manages most of the mountaintops in the Rocky Mountains and Sierra Nevada, where timber values are lower due to sparse forestation and difficulties in access. Again, the notable exception are the O&C lands, which were returned to the federal government after default on a railroad land grant. These lands lie at lower elevations in more productive

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[170] Almost any other federal agency owning land may sell timber incidental to its land management activities; selling timber is often the most economic way to clear forested land.

[171] The O&C lands were withdrawn from a railroad land grant when the railroad failed to meet the conditions of the grant. These lands form the bulk of the areas managed for timber as the dominant use. 43 U.S.C. §1181a.

[172] "Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl, Vol. 1," February 1994, at p. 3&4-126.

areas than most western federal forest lands. In addition, the Pacific Northwest forests provide the largest remaining reserves of old growth forests, which have high timber values as well as high ecological value.

For more than 25 years from the mid 1960s through 1990, the Forest Service averaged more than 10 billion board feet in timber sales annually.[173] Before the issuance of injunctions against logging in the Pacific Northwest, that region produced 1/3 to 1/2 of all Forest Service timber sales, and substantially more than 1/2 of Forest Service timber receipts. BLM, which has a much smaller timber base, averaged more than 1 billion board feet in annual sales until its Northwest timber program was curtailed through litigation. Nearly all BLM timber comes from the Pacific Northwest, mostly from the O&C lands.

WHAT ARE THE BENEFITS?

As mentioned above, both the Forest Service and BLM are required to recover what may be characterized as "fair market value" for their timber sales. Since timber prices fluctuate widely based on the international lumber market, each agency engages in complex timber appraisal processes to meet this standard.

Many factors suggest that neither agency receives fair market value for timber on a consistent basis, and that the timber industry benefits substantially from below-market sales of federal timber. As discussed in the Introduction to this report, two major tests for determining whether federal resource sales provide a subsidy are: (1) whether the sales are made at a rate equivalent to an independent market rate and (2) whether the sales cover the government's costs. As discussed below, critics of federal timber policy have suggested that timber sales fail both the fair market value and "below-cost" tests.

A general caveat must be provided before the following discussion: of all the areas reviewed by committee staff, timber is the one area in which agency policies are currently most in flux. For nearly every topic discussed below, agency staffs explained that policies had changed recently, or were about to change. Litigation in the Pacific Northwest has dramatically altered timber harvest policies for a significant portion of the total federal harvest. Despite these policy shifts, however, all the factors benefitting industry still apply to one extent or another. The recent changes simply make it impossible to provide current estimates of the total benefits being provided to the timber industry.

Below-Cost Timber Sales

One could debate whether the existence of below-cost timber sales is proof that the agencies are not recovering fair market value. Even one of the staunchest opponents of below-cost sales has noted that on rare occasions businesses will sell products below cost in an open market.[174] However,

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[173] Timber sales since then have been sharply reduced due to federal injunctions against timber sales in the Pacific Northwest arising from litigation over ancient forest management and preservation of the Northern spotted owl.

[174] "Review of the Forest Service's Timber Sales Program," Hearing before the Environment, Energy, and Natural Resources Subcommittee, Committee on Government Operations, House of Representatives, 102d Congress, 2d Session, March 31, 1992, at p. 49 (hereinafter cited as "Timber Sales Program") (prepared statement of Mr. Robert E. Wolf).

the Forest Service's continuing pattern of below-cost sales provides timber to the industry at prices far below the government's costs.

The Forest Service conducts many more below-cost timber sales than BLM. The Forest Service does not consider the costs of a sale in appraising the sale and setting a minimum bid.[175] A 1990 report of the General Accounting Office found that almost 40% of the timber sales studied were offered at an appraised price lower than a limited set of expenses for preparing and administering the sale.[176] After bidding above that appraised price, 24% of the final sales still failed to recover these limited costs of sale.[177] In addition, GAO pointed out that its analysis excluded other timber-growing and overhead expenses; if the additional expenses were included, a higher percentage of Forest Service sales would fail to recover their costs.[178]

BLM has an explicit policy to permit below-cost sales only when necessary to salvage damaged timber or meet other forest management needs. By contrast with the Forest Service, only 2% of the 1988 BLM sales reviewed by GAO were offered at a price lower than the preparation and administration costs of the sale, and only one sale was eventually sold below those costs.[179] GAO noted, however, that it could not verify this data independently, due to BLM's uncertain accounting systems.

The Forest Service has an accounting system designed to identify below-cost timber sales—the Timber Sale Program Information Reporting System (TSPIRS, pronounced "tee-spurs"). Since this reporting system was developed at Congressional behest in the late 1980s, it has engendered far more controversy than information. The major drawbacks to TSPIRS are discussed below. Each of these factors reduces the calculation of the number of below-cost sales; nonetheless, TSPIRS verified that more than half of the National Forests—65 out of 122—lost money on timber sales in FY90. Using revised TSPIRS methodology, the Forest Service reported that 82 forests lost money on below-cost sales in FY92.[180]

The most basic problem with using TSPIRS to determine the extent of below-cost timber sales is the fact that it calculates deficits annually on a forest-by-forest basis, rather than on a sale-by-sale basis. Thus, highly profitable sales may outweigh losses on other sales on the same forest, and the deficit sales will never be revealed. Despite the fact that the Northwest

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[175] The General Accounting Office recommended in 1991 that this practice be changed, but no action has been taken. General Accounting Office, Testimony, "Forest Service Needs to Improve Efforts to Reduce Below-Cost Timber Sales," GAO/T-RCED-91-43, April 25, 1991, at pp. 7-8.

[176] General Accounting Office, Report to Congressional Requesters, "Federal Timber Sales: Process for Appraising Timber Offered for Sale Needs to Be Improved," GAO/RCED-90-135, May 1990, at p. 27.

[177] Ibid at p. 28.

[178] Ibid at pp. 26-27.

[179] Ibid at p. 29.

[180] USDA Forest Service, "Timber Sale Program Annual Report: Fiscal Year 1992 (Forest Level Information)," February 26, 1993.

forests, for example, consistently make money on an annual basis, TSPIRS obscures the fact that some timber sales on these forests still lose money.

- GAO found in 1991 that "more than half of the total unrecovered preparation and administration costs on large sales occurred on above-cost forests."[181]

Each of these sales provides the benefit of low-cost timber to the purchasers. GAO recommended that TSPIRS be revised to provide sale-by-sale accounting, but the Forest Service has yet to act on that recommendation.

The second problem with TSPIRS is that it omits or inappropriately amortizes a large proportion of the costs associated with timber sales. For example, when TSPIRS was first developed, the costs of building timber roads (which are generally deducted from timber purchasers' payments as "purchaser road credits") were amortized through accrual accounting over hundreds or even thousands of years. Heavy criticism of that practice led to a revision of the road amortization schedule so that some of the expenses are amortized over 10 or 50 years.

- *More than half* of the costs of timber roads are now never counted as expenses of the timber sale. Instead, these costs—attributable to the cost of creating the road bed—are written off completely as "capital improvements" to the forest.[182] In other words, building roads into roadless areas for the sole purpose of taking out timber is deemed a capital improvement that benefits the forest in general, not the timber purchaser.

Reforestation costs are still amortized over hundreds of years, and road maintenance costs and failed reforestation costs are ignored completely.[183] In addition, expenses for restoring watersheds are not treated as costs of timber sales, even though they may involve *taking out* the very roads beds previously constructed for timber sales and accounted for as capital improvements to the forests. Even if all these sale-specific expenses were included, TSPIRS would still fail to account for Forest Service overhead and the costs of research and development to improve forest growth and reforestation results.

A third serious problem with TSPIRS is that the "benefits" side of the analysis is distorted by inconsistent assessments of economic benefits from timber cutting.

- In 1991 the Tongass National Forest in Alaska counted 80% of all benefits from timber cutting as benefits to fisheries. The Arizona and New Mexico forests counted more than

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[181] General Accounting Office, Testimony, "Forest Service Needs to Improve Efforts to Reduce Below-Cost Timber Sales," GAO/T-RCED-91-43, April 25, 1991, at p. 7.

[182] "Timber Sales Program," at p. 99 (prepared statement of Mr. Randal O'Toole).

[183] Ibid at pp. 98-100.

three-quarters of all benefits from timber cutting as benefits to recreation.[184]

These results are inconsistent between forests, and subject to debate. Adding these benefits into the accounting of timber sales serves only to reduce the apparent losses from these sales. Thus, timber purchasers receive low-priced federal timber, while the accounting system records that the benefits go to the forest itself.

Some forest activists have attempted to calculate the extent of below-cost sales by the Forest Service by re-evaluating the TSPIRS data. One evaluation of timber sales in FY90 determined that "only 22 of the 120 forests made a positive contribution to the treasury."[185] Others used independent analysis to reach the similar conclusions that in FY90 "out of 120 forests, only 21 returned more timber receipts to the Treasury than they spent on timber,"[186] or that for the years 1983 through 1991 "over 100 of the 122 National Forests have such low value timber and earmark so much of the timber receipts that they could not cover their appropriated costs with the balance left after earmarking."[187] Due to the constraints in available data, each of these analysts evaluated below-cost sales only on a forest-by-forest, not sale-by-sale, basis. A GAO analysis of sale-by-sale data found that in FY91 the Forest Service failed to recover $87.9 million in operating costs associated with 262,000 timber sales.[188]

- The most egregious example of below-cost timber sales in the National Forest system is the Tongass National Forest in Alaska. From FY82 through FY88, the Forest Service spent about $389 million on the Tongass timber program and received only $32 million in total receipts. Of the receipts, only $3.9 million represented actual revenue to the Treasury—about $24.4 million went to "purchaser road credits," deducting the value of roads constructed to harvest the timber from the purchaser's bill, with the remaining funds going to other local and on-forest uses. Throughout the 1980's, the Treasury averaged over $50.5 million in average annual losses from Tongass timber sales.[189]

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[184] Ibid at p. 101.

[185] Richard E. Rice, "Taxpayer Losses from National Forest Timber Sales, FY 1990," The Wilderness Society, Washington, DC, May 1991.

[186] Cascade Holistic Economic Consultants (Mr. Randal O'Toole), "Growing Timber Deficits: Review of the Forest Service's 1990 Budget and Timber Sale Program," Research Paper No. 23, April 1991, at p. 1.

[187] "Timber Sales Program," at p. 52 (prepared statement of Mr. Robert E. Wolf).

[188] General Accounting Office, Testimony, "Forest Service Needs to Improve Efforts to Protect the Government's Financial Interests and Reduce Below-Cost Timber Sales," GAO/T-RCED-91-42, April 24, 1991, at p. 14.

[189] "Amending the Alaska National Interest Lands Conservation Act, to Designate Certain Lands in the Tongass National Forest as Wilderness, and for Other Purposes," Committee on Interior and Insular Affairs, H.R. Rpt. No. 101-84, Part I, 101st Congress, 1st Session, June 13,

(continued...)

New ecosystem management policies developed over the past year conclude that the question of whether individual timber sales do not meet their costs is irrelevant; timber sales are to be evaluated only with respect to whether they serve independent forest management purposes. Whether or not this policy will be borne out in practice, timber purchasers may still be considered subsidized by timber purchase prices that fail to cover sale preparation costs.

Market Value—Appraisal and Sale

The other basic method of evaluating whether timber purchasers receive a subsidy is to compare Forest Service and BLM timber sale prices to their market value. In order to make market-value sales, both agencies rely on auction sales after establishing minimum bid prices.

Both the Forest Service and BLM have developed complex processes for setting minimum bids based on market analysis. The unique circumstances of each sale (location, amount of timber offered, proximity of mills) make it difficult to assess whether market value is recovered on a sale-by-sale basis. An overview of the appraisal and sale practices, however, reveals potential benefits to the purchasers from below-market pricing.

The Forest Service uses two appraisal methods in setting the minimum price for a timber sale: "residual value" and "transaction evidence." The residual value appraisal starts out with an estimate of the market value of the milled lumber to be produced from a timber sale. From this eventual sale price, Forest Service analysts subtract the anticipated costs to a hypothetical purchaser—harvest, transportation, milling, etc.—plus a 10-12% allowance for profit and risk. The remaining figure is determined to be the "residual value" of the timber and is set as the minimum bid price. For a transaction evidence appraisal, Forest Service analysts look to evidence of recent transactions in the area to set a minimum appraisal price.

The Forest Service has been shifting most of its timber sales from residual value appraisals to transaction evidence appraisals. Within the last year, the forests in Washington, Oregon and California have moved to transaction evidence appraisals, leaving only the Alaska forests using the residual value method. Under the residual value method, the agency sometimes received bids of five to six times the appraised price. Now, with the transaction evidence appraisal, the Forest Service rarely receives two to three times the appraised price—most often it receives one-and-a-half to two times the appraised value.

The higher relative mark-up on timber sale prices indicates that the residual value method produces an appraised value that lies further below the actual market price. In addition, the data collection for residual value analysis increases administrative costs and leads to long lag times between collecting data and setting minimum bids.

However, the transaction evidence methodology has been criticized as well, for using complex adjustments to actual transaction data and a

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[189](...continued)
1989. The Forest Service interpreted section 705(a) of the Alaska National Interest Lands Conservation Act, Public Law No. 96-487, 94 Stat. 2371, December 2, 1980, as a mandate to provide 450 million board feet of timber annually, regardless of the actual market demand. Section 705(a) also established a permanent appropriation of "at least" $40 million annually in subsidies to the Tongass timber program.

"rollback" of 20% or more to ensure that the appraised price lies below market value.[190] Rolling back the appraised price below the actual evidence of prices in comparable transactions would appear to ensure that timber resources are appraised below market value; the Forest Service argues that this rollback ensures competition in the bidding process.

At any rate, the Forest Service almost never fails to receive a bid at its appraised price. This suggests that both appraisal methods generally produce a minimum bid that lies below market value. The question of whether minimum bids equal market value can be important in areas where there is little competition for federal timber.

- A 1990 General Accounting Office report found that 5% of the 1988 Forest Service sales reviewed involved a single bidder at oral auction. In such circumstances, the Forest Service ends up awarding the sale at the minimum bid price.[191]
- In the Sequoia National Forest, only two purchasers bid on timber sales, which generally sell for 10 to 20% over the minimum advertised bids. The nearby Tahoe and Plumas National Forests support many more purchasers, yielding bids of 80 to 90% over the minimum bid price.

Where few timber companies will bid on a sale, the rollback from market price in transaction evidence analysis or the lower price set by residual value analysis provides a direct benefit to the timber purchasers.

BLM also uses the residual value method (called "analytical appraisal" by BLM) and transaction evidence to set minimum bids. In addition, the agency uses two other methods—comparable sales, and a minimum bid price set statewide by the state BLM director. Currently, most minimum bid appraisals outside western Oregon use the Forest Service's transaction evidence date. In western Oregon, BLM still uses the residual value method.

Once a minimum bid price is set, the method of sale—by oral auction, sealed bid, or negotiation—will affect the price the government receives for its timber. The Forest Service makes all sales by oral auction or sealed bid. Just as the Forest Service's minimum bid appraisals have shifted in recent years toward transaction evidence analysis, so have its sales procedures shifted more toward sealed bidding. Currently, 80-90% of Forest Service timber sales use sealed bids.

BLM uses both oral auctions and sealed bidding, but also makes some sales at negotiated prices. Ninety percent of BLM timber is still sold at oral auctions. BLM managers may negotiate prices only on sales of less than 250,000 board feet.

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[190] General Accounting Office, Report to Congressional Requesters, "Federal Timber Sales: Process for Appraising Timber Offered for Sale Needs to Be Improved," GAO/RCED-90-135, May 1990 at p. 4; "Timber Sales Program," at pp. 41-42 (prepared statement of Mr. Robert E. Wolf).

[191] General Accounting Office, Report to Congressional Requesters, "Federal Timber Sales: Process for Appraising Timber Offered for Sale Needs to Be Improved," GAO/RCED-90-135, May 1990, at p. 20.

It may be that oral auctions always fail to recover a full market price, since the high bidder always receives some benefit from knowing the price he has to beat. Also, where a bidder can see that there is little competition present, he may adjust his bidding downward; in areas with greater competition, oral auctions should recover a price closer to the sealed bid price. The Forest Service explains that it finds oral bidding useful at times to gauge market conditions, despite the potential benefit to timber purchasers.

Measuring the Timber

Another aspect of timber sales that may influence the value received is the method by which the agency measures the amount of timber available for sale. All BLM timber is sold in "lump sum" sales (also called "on the stump"). The agency tells the potential purchasers which trees are available for sale, and they may examine the area themselves to determine the timber value. They then bid a single price for the entire sale. The Forest Service uses the lump sum method and three other methods for designating the amount of timber available in various sales: scaled sales, weighed sales, and tree measurement sales.

In scaled sales, the Forest Service estimates the amount of timber available in trees available for sale, either by board-feet or cubic feet. Purchasers bid a price per board-foot or cubic foot, and then pay for only the amount of timber actually cut, based on "scaling" measurements. The total value of the sale is not determined until after the timber is logged and measured. There are many different scaling standards used in various regions of the country. Despite the fact that scaling by board-foot tends to understate the amount of timber in the smaller trees currently being cut in the Pacific Northwest, the practice has continued until the present as the most common method of measuring timber. The Forest Service is now shifting to cubic foot measurements.

Tree measurement sales are similar to lump sum sales, but the Forest Service evaluates the area and tells the purchasers what the total amount of timber recovered will be on a board-foot or cubic foot basis. When the sale is bid out, the price per board-foot or cubic foot establishes the total value of the sale. Then, if changes in conditions of the sale require modifications of volume, the Forest Service designates additional trees to be cut. The sale is never measured except by Forest Service appraisers' advance measurements of the trees.

The most common Forest Service sale types are scaled sales and tree measurement sales. Weighed sales are similar to scaled sales, except that the timber is paid for by measured weight rather than measured volume.

Each of these sale types carries the potential for abuse and unwarranted benefits to timber purchasers. With a lump sum sale or tree measurement sale, the abuse involves on-the-ground violations of sale conditions or modifications of sale boundaries. With scaled or weighed sales, there is the possibility of on-the-ground violations and of fraud in measuring the sale.

- In late 1991, a log scaler in Detroit, Oregon was indicted for timber theft in an alleged scheme of defrauding the government in purchases of timber from the Willamette National Forest. At least three timber companies were alleged to have been involved in the bribery and fraud. Although the indictment charged $1.6 million in timber

thefts, the broader conspiracy was thought to have cost the government as much as $36 million over several years.[192]

Scaled sales may also be abused by "skewed bidding." Sales of forest resources often comprise several different species, and purchasers bid on a species-by-species basis. In skewed bidding, they bid high prices for the low-valued species in order to raise their bids to the highest projected total bid, while bidding low on the more valuable species. Then during harvest they avoid or destroy the lower valued species, purchasing by scale only the high-valued timber for which they bid a low price.

To avoid some of the abuses of scaling, the Forest Service has been shifting to tree measurement sales. Only western National Forests still use scaling.

Contract Term Extensions

Due to the fluctuations in the market for lumber, timber purchasers may also benefit from extensions of their contracts that allow them to delay logging until they can sell the lumber for more favorable prices. Forest Service contracts allow 3-5 years for completion. BLM contracts allow as much as 1-3 years, with a possibility of extension under special circumstances.

Despite the need to avoid speculation in the market, the Forest Service issued a regulation in 1990 allowing one-year extensions to pending timber contracts in the Pacific Northwest. Over $1 billion worth of contracts were extended. The extensions provided a substantial benefit to the 67 purchasers holding the extended contracts, who could wait for lumber prices to rise before harvesting the timber. GAO questioned the Forest Service's action, finding that it rested on inadequate analysis and conflicted with other steps taken to avoid speculation, discussed in the section below.[193]

- Two unusually long-term (over 50 years) contracts provided non-competitive monopolies to two pulp mill companies for enormous amounts (13.3 billion board feet) of timber from the Tongass National Forest. These 1950s-era contracts, designed to promote community development and stability, gave direct subsidies for road building and other timber-related expenses, plus huge volumes of federal timber at prices averaging as low as $1.48 per thousand board feet.

  The Tongass Timber Reform Act of 1990 attempted to reduce this subsidy by setting over a million acres of old-growth off limits to timber harvest, terminating the permanent appropriation for the timber program, and providing for changes in the terms of the two long-term

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[192] Lance Robertson, "Timber fraud investigation brings arrest," *The Register-Guard*, Eugene, Oregon, November 1, 1991; Dan Postrel, "Feds indict ex-log worker," *Statesman Journal*, Salem, Oregon, November 1, 1991.

[193] General Accounting Office, Testimony before the Subcommittee on Interior and Related Agencies, Committee on Appropriations, "Forest Service Timber Sales Program: Questionable Need for Contract Term Extension and Status of Efforts to Reduce Costs," GAO/T-RCED-92-58, April 28, 1992.

contracts.[194] Incomplete implementation of these reforms meant that in 1992 the Tongass was still the largest money loser in the National Forest system, costing $29 million in below-cost sales.[195] In April 1994, the Forest Service finally terminated the 50-year contract with the Alaska Pulp Corporation, and moved toward competitive bidding in that company's timber sale area. The second long-term contract, held by the Ketchikan Pulp Company (Louisiana Pacific), extends through the year 2004; the taxpayer subsidies will continue for as long as the contract remains in effect.

Contract Defaults

Federal timber purchasers may receive additional benefits through speculation on timber prices, to the extent that they are not required to pay the full cost of defaults on their contracts. If a timber purchaser defaults and fails to complete all or part of the contract within the contract term, the agency will put the contract out for re-bid. Upon default, the purchaser pays damages to the agency for the difference between the original contract price and the new contract price, plus the administrative costs of resale. The payment of damages to the Forest Service is guaranteed by a performance bond for up to 10% of the cost of the sale.[196]

Speculative bidding in the late 1970s, followed by a drop in the market for timber, led to a very significant increase in timber sale defaults and timber company bankruptcies in the early 1980s. Congress responded with the Federal Timber Contract Payment Modification Act, which allowed holders of some of the highest-priced contracts to obtain a release by payment of a fee. The purchasers paid the Forest Service $172 million to sell back contracts worth $2.5 billion on their face.[197] The government still was left with hundreds of millions of dollars in defaults, of which $136 million is considered uncollectible and much of the rest is subject to pending litigation.[198] In some cases, the sureties holding performance bonds have denied liability.

In order to avoid the spectre of massive defaults in the future, the Forest Service has modified some of its contract terms. It now requires that 10% of the value of each sale be deposited upon purchase. In addition, the maximum performance bond has increased from $200,000 to $500,000. For contracts allowing more than 2 years for completion, the purchaser must pay

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[194] Public Law No. 101-626, 104 Stat. 4426, November 30, 1990.

[195] USDA Forest Service, "Timber Sale Program Annual Report: Fiscal Year 1992 (Forest Level Information)," February 26, 1993. An economic consultant retained by environmental groups found the actual loss to the Treasury to be $64 million. See Randal O'Toole, "The 64 Million Dollar Question: How Taxpayers Pay Pulp Mills to Clearcut the Tongass National Forest," Cascade Holistic Environmental Consultants, Oak Grove, Oregon, March 1993.

[196] BLM requires a "cutting bond" as well as a performance bond, to ensure that it will receive payment for any trees actually cut.

[197] General Accounting Office, Report to Congressional Requesters, "Timber Sale Contract Defaults: Forest Service Needs to Strengthen Its Performance Bond and Contract Provisions," GAO/RCED-94-5, October 1993, at p. 2.

[198] Ibid.

50% of the contract price at the midpoint of the contract term, if half the sale has not been logged by then. GAO recommends that further steps be taken to avoid future contract defaults:

1) Down payments should be retained until contract performance is substantially complete, rather than the current Forest Service practice of returning the down payment once 1/4 of the timber is harvested; and
2) The Forest Service should improve its performance bonding requirements to increase the certainty of recovering from surety companies.[199]

Industry Participation in Forest Service Policymaking

Recent allegations of timber industry participation in the policymaking processes of the Forest Service indicate another substantial benefit to federal timber purchasers. According to documents received by forest activists under the Freedom of Information Act, Forest Service employees participate in twice-yearly meetings with the Federal Timber Purchasers Committee (FTPC). These FTPC meetings involve working groups that review policy on many of the issues discussed above: timber appraisals, timber measurement methods, and financial security of sales.

The existence of such meetings does not presuppose undue influence on Forest Service decisionmaking. However, certain documents do indicate that the timber industry can influence decisions that affect its benefits from the Forest Service. For example, the draft minutes from the April 1992 FTPC meeting state that a Forest Service employee "affirmed" the Forest Service's "past commitment that no changes be made to the cubic rule unless the cubic rules committee review and adopt the change." Allowing a timber industry group the authority to veto tree measurement standards provides a distinct and tangible benefit to the members of that group.

A recent audit report by the Inspector General of the Department of Agriculture verified that inappropriate meetings had taken place. That report's findings included:

- "Meetings with industry groups give the appearance of undue influence on [Forest Service] policy."
- "Past appraisals may have been affected by industry's involvement in [Forest Service] pricing policies."
- "Industry was consulted on timber appraisals."[200]

The report also revealed that industry groups had been allowed to comment on proposed federal rules before they were published in the *Federal Register*.[201] Recently, the Forest Service cancelled its participation in the spring 1994 FTPC meeting.

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[199] Ibid at p. 8.

[200] Office of Inspector General, USDA, Evaluation Report, "Forest Service Influence of Interest Groups on Timber Sales Management," Report No. 08099-146-SF, April 1994, at pp. 44-51.

[201] Ibid at p. 44.

Tax Benefits for Limited Partnerships

Timber purchasers receive overlapping federal benefits from the special treatment of publicly traded limited partnerships under the tax code. Although this special provision applies to a broad range of entities whose incomes derive from natural resources, it has most notably been used by certain timber companies to reduce their tax liability.

In 1987, the Omnibus Budget Reconciliation Act of 1987 changed the tax treatment of publicly traded limited partnerships. Previously, although publicly traded like corporations, these entities had been treated as partnerships for tax purposes, thereby avoiding the taxes paid by corporations. When this loophole was closed, two major gaps were left behind: existing partnerships were grandfathered for ten years; and partnerships receiving 90% of their income from interest, dividends, real property, or natural resource development were exempted (including minerals, geothermal energy, fertilizer and timber).[202]

The exemption for natural-resource based partnerships means that these entities pay taxes only at the partner level on personal income, rather than paying both corporate tax plus shareholder tax on any income distribution.

- In 1989, Burlington Resources, Inc. took advantage of this loophole by spinning off its timber subsidiary, Plum Creek Timber, as a publicly traded limited partnership. Burlington remained the general partner in Plum Creek until selling the company to SPO Partners & Co. in 1993. The limited partnership prospectus promised a reduction in federal tax liability from $33 million in 1988 to $0 in 1990. Reportedly, Plum Creek paid $443,000 in state and federal taxes on income of $14.4 million in the last seven months of 1989. In the preceding five months, it paid $14.5 million in taxes on $24.4 million in income.[203]

Other wood products companies exercising this option to take advantage of the tax code include International Paper and ITT.[204]

Other Vegetative Products

In addition to timber, both BLM and the Forest Service sell a wide range of other vegetative products: firewood, Christmas trees, mushrooms, berries, etc. The agencies are required to recover fair market value on these sales. Most are sold on fee schedules, though high valued items with limited supply, such as mushrooms, may be put up for auction. BLM makes about 40,000 sales per year of other vegetative products; the Forest Service makes over 200,000 sales at a total value of less than $3 million.

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[202] 26 U.S.C. §704.

[203] "Plum Creek: Tax Breaks for Timber Companies," *Transitions*, Vol. 5, No. 5, May 1992 (reprinting John Gillie, "Tax breaks add to timber profits," *Morning News Tribune*, Tacoma, Washington, May 27, 1990).

[204] Ibid.

WHO GETS THE BENEFITS?

The benefits of federal timber sales go to a wide range of companies. Both large and small purchasers benefit from below-cost or below-market sales of timber. Depending on region, sales may be purchased and logged by anything from multinational corporations to small family-owned lumber mills. A 1983 study of sales from 1973 through 1979 showed that small purchasers (under 500 employees) purchased 68% of nearly 18,000 timber sales and received about half the total timber volume. The smaller purchasers were concentrated heavily in the East, and to a lesser extent in the Pacific Northwest.[205] In addition to timber companies, sureties have sometimes benefitted from their refusal to pay damages on timber purchaser defaults.

Regional variations in timber value are enormous. By far the most valuable remaining timber in the federal system lies on the west side of the Cascade Mountain range in the Pacific Northwest. Less valuable resources lie in the more arid regions east of the Cascades, in the Rockies, and the desert areas of the Southwest. Southeastern forests are highly productive, but the timber sells at lower prices because all the oldest trees have been cut, leaving less valuable second- and third-growth forests.

Once timber is sold, the sale may be subcontracted or resold to a third party. Neither the Forest Service nor the BLM will review the price on the resale, though both agencies require agency approval of the purchaser and maintenance of an adequate performance bond.

In 1944, the Sustained Yield Forest Management Act authorized both agencies to establish "sustained yield units," where access to timber sales would be restricted to a limited region to maintain local community stability. Restricting sales to only local mills means that there is less competition for timber, resulting in lower prices.

- On the Shelton Unit in the Olympic National Forest, timber is typically sold at the appraised price. Other sales outside the Shelton Unit go for 10%-50% above the appraised price.

The Forest Service has established only a handful of these sustained yield units.

An export ban sets the other major restriction on who may benefit from federal timber sales. The timber from federal lands must be milled before it is exported. In addition, timber may not be sold to a company that plans to substitute that federal timber for unmilled logs from another source that will then be shipped overseas.[206]

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[205] USDA Forest Service & Small Business Administration, "National Study Report: Small Business Timber Sale Set-Aside Program," August 1983, at pp. 107-116. More recent data currently being developed by the Forest Service for the 1988 to 1992 period shows that the proportion of sales going to small businesses has increased, with small firms receiving as much as three-quarters of all sales and 60% of total timber volume.

[206] Ross W. Gorte, Congressional Research Service, "Log Export Restrictions," 91-365 ENR, April 22, 1991.

GRAZING

Grazing occupies a substantial proportion of the federal land in the West. About 165 million acres of land is included in grazing "allotments"—leased areas—on BLM land, mostly on the 200 million acres managed by BLM in the lower 48 states. The Forest Service calculates that 50 million acres of land on the National Forests is "suitable" for grazing, out of 100 million included in Forest Service grazing allotments. Grazing overlaps with other uses throughout the lands managed by these agencies.

The use of federal land for grazing by cattle and sheep is closely identified with the traditional image of the West. Federal allotments form a high proportion of the land used by many ranching operations, and support local ranching communities. Improperly regulated, however, grazing can cause widespread erosion of the land and destroy native ecosystems and riparian areas. Western lands were widely and destructively overgrazed in the latter half of the nineteenth century. BLM asserts that the overall condition of federal land on grazing allotments has improved since the Taylor Grazing Act was passed in 1934, but significant ecological damage remains, and new damage continues to occur in some areas.[207]

WHAT ARE THE BENEFITS?

Under the Federal Land Policy and Management Act, both BLM and the Forest Service should receive fair market value for livestock forage on their lands, although they are also subject to a separate mandate to develop an "equitable" fee structure. The question of whether they actually do recover fair market value has been debated with some heat in recent years. In addition to any discount in the price of forage, ranchers also receive various federal benefits from the Department of Agriculture.

Grazing Fees

The fees charges for grazing are set separately by the Forest Service and BLM. Each charges a monthly fee for each animal grazed on an allotment. The current BLM charge per "animal unit month" is $1.98.[208] About 800 pounds of forage is consumed in each animal unit month.[209] In the eastern National Forests, the Forest Service uses a bidding system to price and allocate grazing allotments.

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[207] General Accounting Office, Report to the Chairman, Subcommittee on National Parks and Public Lands, Committee on Interior and Insular Affairs, House of Representatives, "Rangeland Management: Comparison of Rangeland Condition Reports," GAO/RCED-91-191, July 1991.

[208] The "animal unit month" is an attempt to standardize charges across different kinds of livestock; one animal unit month is equal to one cow and calf or 5 sheep.

[209] Charles F. Wilkinson, *Crossing the Next Meridian: Land, Water, and the Future of the West*, Island Press, 1992, at p. 91.

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In the West, federal agencies charge significantly lower rates to lease federal grazing land than those for state or private lands. Yet there has been substantial debate over whether these fees may be considered "subsidized." Federal grazing allotments typically require that the allottee install and maintain fencing and develop water sources for the livestock, whereas other land owners may include these items in their higher fees. Independent analyses, however, show that such differences are insufficient to account for the discrepancy between federal and state private lands fees.[210]

Apart from this question of the relative value of federal versus private grazing land, two other factors suggest that federal grazing fees lie below market value: increased land values and profitable subleasing. Holding a federal grazing lease increases the value of the associated ranch by a measurable amount. Thus, the federal lease is regarded as more valuable than simply the opportunity to purchase forage on the open market, yielding the conclusion that the federal price is lower than the open market. In addition, BLM lessees (but not Forest Service lessees) are allowed to transfer or sublease their grazing rights, and frequently do so at a profit.

- The Interior Inspector General reported several cases of profitable subleases, including one in which a California public utility subleased its base property and twenty federal grazing allotments. The sublessees paid the utility $3.90 per animal unit month, in addition to the $1.81 paid to BLM.[211]

The profit from these subleases shows not only that the original leases lie below market value, but also that the lessees can convert the subsidy to cash.

Still a further indication of the subsidy is the GAO finding that federal grazing fees fell through the 1980s, while grazing fees for private lands rose.[212] A recent report by the Department of Agriculture concluded that ranchers holding federal grazing permits earned more than ranchers without access to federal lands.[213]

In addition, grazing fees fail to recover the BLM and Forest Service costs of running the program. The shortfall from grazing fees for the two agencies in 1990 reached $52 million.[214] The Inspector General determined

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[210] E.g., General Accounting Office, Briefing Report to the Chairman, Environment, Energy, and Natural Resources Subcommittee, Committee on Government Operations, House of Representatives, "Rangeland Management: Current Formula Keeps Grazing Fees Low," GAO/RCED-91-185BR, June 1991.

[211] Office of Inspector General, Audit Report, "Selected Grazing Lease Activities, Bureau of Land Management," Report No. 92-I-1364, September 1992, at p. 23.

[212] General Accounting Office, Briefing Report to the Chairman, Environment, Energy, and Natural Resources Subcommittee, Committee on Government Operations, House of Representatives, "Rangeland Management: Current Formula Keeps Grazing Fees Low," GAO/RCED-91-185BR, June 1991, at p. 11.

[213] "Ranchers With Grazing Permits Earn More, Report Says," *Albuquerque Journal*, July 26, 1994.

[214] Cathy Carlson & John Horning, "Big Profits at a Big Price: Public Land Ranchers Profit at the Expense of the Range," National Wildlife Federation, Washington, DC, September 1992, (continued...)

that BLM had a shortfall in 1990 of $2.9 million on just those lands subleased by permittees, while the permittees might have made as much as $5.1 million by subletting the allotments for fair market value.[215]

In 1992, the Government Operations Committee estimated that the federal government had lost $1.18 billion since 1985 from pricing grazing fees below market value.[216] That report estimated that $150 million per year might be recovered if grazing fees were raised to fair market value.[217] In 1993 the Congressional Budget Office estimated that raising grazing fees could reduce the federal deficit by $20 million per year, after a phase-in period.[218]

Use of Grazing Fee Receipts

Ranchers holding federal grazing permits obtain further benefits when the fees they pay are returned to them in the form of range improvements on both federal and local levels. In effect, the use of these fee receipts to benefit the ranchers means that the ranches are further subsidized, since they recover a significant portion of the value of the fees.

Half of the value of the fees paid BLM by grazing allottees are transferred into a Range Betterment Fund. This fund may be used only for a variety of range improvements, including wildlife habitat, water quality and other range conservation improvements as well as grazing improvements. In practice, BLM's accounting for the fund has been shoddy, but the vast majority of the sums accounted for—more than 90%—have gone to grazing-related expenses. Thus, the grazing allottees appear to receive the benefit of most of the fees paid into the fund.

In addition to this federal fund, both BLM and the Forest Service pay a portion of grazing fees back to the states, which the states then distribute to the counties where the grazing occurs. The Forest Service pays 25% of its grazing receipts back to the states; BLM payments range from 12% to 50%, depending on various statutory authorities. County payments are then distributed according to state law. In many areas, however, these payments again contribute to ranching operations through local "grazing advisory boards" controlled by the ranchers, which manage the payments according to state law. At times, these funds have been used to sue the federal government.

- In late 1992, the District 1 Grazing Advisory Board in Nevada found itself with $290,000 in excess funds. State law permitted expenditures for "emergencies," so the board—after narrowly rejecting a proposal to use the funds

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[214](...continued)
at p. 2 (citing U.S. Bureau of Land Management & U.S. Forest Service, "Grazing Fee Review and Evaluation Update of the 1986 Final Report," April 30, 1992).

[215] Office of the Inspector General, Audit Report, "Selected Grazing Lease Activities, Bureau of Land Management," Report No. 92-I-1364, September 1992, at p. 21.

[216] "Decade of Decline," at p. 198.

[217] Ibid.

[218] Congressional Budget Office, "Reducing the Deficit: Spending and Revenue Options," A Report to the Senate and House Committees on the Budget, February 1993, at p. 232.

to sue the federal government over a property rights issue—determined that drought conditions constituted an "emergency," and rebated $200,000 of the grazing fee funds directly to the district's ranchers.

Use of Environmental Amenities

In addition to the direct benefits from below-market grazing fees, federal grazing allottees receive benefits from the use of environmental amenities commonly withheld from other extractive industries. For example, grazing allotments have been allowed to continue in more than a dozen units of the National Park system. Such extractive use is inconsistent with the overall purposes of the National Parks. Commonly, mining claims in these areas are limited to existing claims, and timber cutting is not allowed. Only livestock grazing continues the new extraction of resources from the parks.

Further, designated wilderness areas on federal lands may still be used for grazing allotments. The allottees at times have used these areas in a manner inconsistent with their wilderness use.

- For example, in the Gila and Aldo Leopold Wilderness areas in New Mexico, the Forest Service has permitted continued severe overgrazing, dozens of new permanent grazing improvements, such as stock tanks, and inappropriate use of mechanized equipment. In one incident, the allottee used a bulldozer to channelize a wilderness stream to maintain water flow to stock tanks. The permit holder is an East Texas bank that acquired the grazing permit when it foreclosed on the allottee.

Failure to Enforce Restrictions on Use

Grazing permits contain extensive conditions and restrictions to protect the local environment, particularly riparian areas. More generally, BLM grazing permits are deemed a privilege that may be terminated upon two years' notice to the permit holder. Additional benefits may come to grazing permittees when the federal government fails to enforce various permit terms, including both the government's own right of re-entry and specific environmental restrictions.

The resource agencies have been plagued with accounts of battles with ranchers who do not wish to heed environmental restrictions.[219] In 1988, the GAO found that thousands of miles of riparian areas on federal lands required restoration, but had little chance of recovery because of the perceived unwillingness of the agencies to place restrictions on grazing permittees.[220] In 1990, GAO found that BLM's efforts to deter grazing

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[219] Rocky Barker, "Groups say rich ranchers get free ride," *High Country News*, December 13, 1993, at p. 4; Jeff Barker, "Ranching brothers tilt with regulators," *The Arizona Republic*, September 14, 1992, at p. A6; George Wuerthner, "Employees Struggle to Fulfill NEPA on Upper Ruby," *Inner Voice*, Summer 1991, at p. 5.

[220] General Accounting Office, Report to Congressional Requesters, "Public Rangelands: Some Riparian Areas Restored but Widespread Improvement Will Be Slow," GAO/RCED-88-105, June 1988, at pp. 18 and 38.

trespassers were "inadequate."[221] The permittees' failure to obey environmental restrictions, and the agencies' failure to enforce them, constitutes another federal benefit to the grazing permittees. To the extent that they can add additional livestock to their allotments, or use lands and riparian zones over extended areas and extended periods, they receive forage they have not paid for, at the cost of federal environmental resources.

Furthermore, the failure of the agencies to enforce the two years' notice provision in grazing leases can also provide an additional subsidy. Although grazing regulations emphasize that grazing is a *privilege* that can be revoked, some ranchers have claimed a property right in their grazing permits.

- In 1992, the Department of Energy (DOE) and BLM needed to use an allotment leased to Gene Hollenbeck of Montrose, Colorado, to accommodate DOE use of a road crossing the allotment for six years. In spite of the two-year termination clause in Mr. Hollenbeck's grazing permit, the possibility of litigation led the agencies to provide a generous settlement. DOE agreed to pay all costs of grazing Mr. Hollenbeck's cattle on private land for six years, including even reimbursing the long-distance telephone calls involved in negotiating the agreement.

Again, any additional benefits the permittees negotiate past their two-year notice rights provide additional federal support for their activities.

Department of Agriculture Programs

Like Reclamation irrigators, ranchers using federal lands in the West also receive benefits from the Department of Agriculture. They may benefit from subsidized loan programs of the Farmers Home Administration (FmHA), and from animal damage control and disease control programs of the Animal and Plant Health Inspection Service.

The FmHA programs provide many of the same benefits described above for water users: low-cost loans of various types provided under various conditions. In addition to the low interest rates, ranchers can obtain the benefits of generous loan default policies described above in the section on Irrigation Water. A recent Agriculture Department report noted dramatically the reliance of some public lands ranchers on FmHA loans as well as grazing subsidies, concluding that 45% to 60% of the grazing permittees holding FmHA loans in four states would default if grazing fees were increased.[222]

The animal damage control program has proved quite controversial with respect to both its cost-effectiveness and its impact on wildlife. The major animal control activity on behalf of ranchers is destruction of predators, primarily coyotes that eat young livestock. The programs have been criticized as ineffective and inhumane, leading to indiscriminate trapping and

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[221] General Accounting Office, Report to the Chairman, Subcommittee on National Parks and Public Lands, Committee on Interior and Insular Affairs, House of Representatives, "Rangeland Management: BLM Efforts to Prevent Unauthorized Livestock Grazing Need Strengthening," GAO/RCED-91-17, December 1990.

[222] Philip Brasher, "Grazing Fee Hike May Spur Defaults," *Albuquerque Journal*, June 16, 1994.

poisoning of other, non-predator wildlife. In addition, there is some evidence that putting pressure on coyote populations may simply lead to larger and more frequent litters. Regardless of their effectiveness, these programs, together with disease and tick control, provide additional federal benefits to western ranchers.

WHO GETS THE BENEFITS?

The Forest Service and BLM impose slightly differing requirements to qualify for grazing permits. The Forest Service requires that the permit holder own the livestock and base property associated with the grazing allotment. BLM allows the livestock to be leased to the permit holder, or the permit holder to lease out the use of the land to another's livestock, so long as the permit holder controls the livestock. The property ownership required for a BLM permit can be as minor as ownership or control of stock watering rights associated with the allotment.

In addition, BLM allows subleasing or transfers of grazing permits, while the Forest Service does not.[223] BLM will approve transfers of permits upon application, and allows the permit to pass on with the base property when the owner dies. The Forest Service prohibition on transfers ensures that the benefit of the grazing permit stays with the original permittee, and that the original permittee cannot profit by selling the subsidy along with the permit.

Another influence on who gets the benefit of federal grazing allotments is the capitalization of the value of federal permits into the value of the underlying ranch. When a ranch is sold, part of the price includes the value of any associated federal grazing allotment. Even if the existing grazing permit is not transferred with the property, permits are generally renewed for the same allotment. Thus an allotment may be associated with the same ranch for generations. The value of the grazing subsidy is capitalized into the value of the ranch, and the first owner retains that value when the ranch is transferred.

Analyses of the control of federal grazing land are dependent on the agencies' databases. These databases do not provide direct information regarding the distribution of grazing allotments, because many entities hold many separate allotments under separate permits, often using separate names. For both agencies, certain large allotments also are held by grazing associations of several ranchers, who are not separated out by the agency.

GAO prepared profiles of BLM's grazing allotments and permits in 1992, and of the Forest Service's grazing allotments and permits in 1993. Out of 22,058 total BLM allotments in 1991, the 500 largest controlled almost 50% of BLM's total grazing acreage.[224] The 2,000 largest allotments controlled almost 75% of the land.[225] This concentration of land by the largest operators was consistent in the National Forests as well. The Forest Service managed 8,472 allotments in 1992, of which the 500 largest

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[223] Some illicit transfers of Forest Service permits have been reported.

[224] General Accounting Office, Fact Sheet for the Chairman, Environment, Energy and Natural Resources Subcommittee, Committee on Government Operations, House of Representatives, "Rangeland Management: Profile of the Bureau of Land Management's Grazing Allotments and Permits," GAO/RCED-92-213FS, June 1992, at p. 8.

[225] Ibid at p. 9.

controlled one-third of the total allotment acreage and the 2,000 largest controlled 70% of the total acreage.[226]

Another study was conducted in 1992 by the National Wildlife Federation. Using data that BLM had provided to the House Government Operations Committee, the Federation examined holders of multiple allotments, revealing even greater concentrations of grazing land. By looking for common names and addresses in the BLM data, plus corporate ownership data, the report found a number of clusters of numerous allotments under the same name, or under different names at the same address.[227] It concluded that 20 entities controlling the largest amount of public grazing land accounted for 9.3% of all the animal unit months available on BLM lands.[228]

- Dan Russell of California held the largest acreage—40 allotments comprising 5 million acres of federal land in California, Nevada and Wyoming.
- The Ellison Ranching Company of Nevada holds 16 BLM grazing permits occupying 2.4 million acres, plus another 2 allotments issued by the Forest Service for the Humboldt National Forest.
- The J.R. Simplot Co. has nearly 1 million acres of BLM grazing permits in Idaho, Utah and Nevada, and is adding on another 700,000 acres of public lands in Oregon as part of an acquisition of the ZX Ranch, currently owned by Metropolitan Life. The principal of J.R. Simplot also owns one of the largest potato farming operations in the United States, which receives separate agricultural benefits.

Apart from these corporate ranching operations, grazing allotments also go to other non-traditional ranchers, including the Western States Minerals Co. (a gold mining company), David Packard and William Hewlett of the Hewlett-Packard Corporation, the Metropolitan Life Insurance Co., and the Mormon church.

In addition to the direct benefits of large grazing allotments, the ranchers described above may also receive substantial benefits from Department of Agriculture programs. As with irrigation water, it is very difficult to determine the overlap because federal agencies do not collect this information and do not require self-reporting of other federal benefits by the permittees. Even the data developed above by the National Wildlife Federation was obtained only indirectly from agency files; permit holders often use multiple names or corporations to hold their many federal benefits.

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[226] General Accounting Office, Fact Sheet for the Chairman, Environment, Energy, and Natural Resources Subcommittee, Committee on Government Operations, House of Representatives, "Rangeland Management: Profile of the Forest Service's Grazing Allotments and Permittees," GAO/RCED-93-141FS, April 1993, at pp. 11-12.

[227] Similar data could be developed for the National Forests. John Horning, "The Forgotten Rangelands: A Call for Reform of U.S. Forest Service Grazing Policy," National Wildlife Federation, Washington, DC February 1994, at pp. 21-25.

[228] Cathy Carlson & John Horning, "Big Profits at a Big Price: Public Land Ranchers Profit at the Expense of the Range," National Wildlife Federation, Washington, DC, September 1992, at p. i.

RECREATION

Each year, millions of people enjoy the recreational opportunities offered by Bureau of Land Management (BLM), National Park Service (NPS), Forest Service and Fish & Wildlife Service (FWS) lands.[229] Many are non-commercial users who pursue such activities as hiking, camping, swimming, boating, off-road vehicle races and hunting. But a host of money-making enterprises ranging from rafting and horseback riding to guided hikes, skiing and golf also use these federal lands. Still other operators provide food, lodging and general visitor services. This report discusses only those operations that are commercial in nature.

Although recreational activities have caused considerably less environmental damage than other commercial enterprises described in this report, adverse impacts cannot be ignored. Ski resort areas have probably led to the most serious environmental degradation, since they involve the greatest land modification. Despite the best efforts of operators, heavily rafted rivers are often affected by campsites on their banks. This is a problem especially in areas where there are many rafters but only a few campsites. Increasing demands for recreation have affected the National Park system, which must mitigate damage caused by visitors. Some parks now limit the number of tour buses to reduce air pollution. In some instances, recreational activities may be incompatible with the mission of the agency. FWS has recently begun enforcing a 1984 policy permitting only those recreational uses that are wildlife oriented.

There is no government-wide standard for managing recreational enterprises; GAO identified at least 11 different laws regulating concessions and permit agreements.[230] The most important statute is the Federal Land Policy and Management Act (FLPMA) of 1976, which requires that the government receive a fair market value for the use of its public lands. The Grand Canyon is regulated under separate legislative authority.

Although BLM, FWS, the Forest Service and NPS all manage activities primarily through permits and concessions, these two terms are defined differently by different agencies. Moreover, the degree of control exercised by each agency over concessioners and permittees varies. In the National Refuge system, local managers have considerable discretion in determining which activities to allow, how they are regulated and how much operators

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[229] Almost 270 million people visit National Parks each year. BLM reports 70 million recreation visits, and the Forest Service estimates it has 800 million visitor days annually. Approximately 30 million people visit the National Refuge System each year.

[230] The GAO report surveyed concession operations on federal lands managed by NPS, BLM, FWS, the Forest Service, the Bureau of Reclamation and the Army Corps of Engineers. General Accounting Office, Report to the Chairman, Environment, Energy, and Natural Resources Subcommittee, Committee on Government Operations, House of Representatives, "Federal Lands: Improvements Needed in Managing Concessioners," GAO/RCED-91-163, June 1991.

pay. By contrast, NPS lays out a regulatory process to answer such questions.

BLM and FWS concessions give the holder exclusive use of the land, which often includes fixed capital assets owned by the government. BLM has only 16 concessions, mostly inherited from the Bureau of Reclamation (BuRec) and located on the lower Colorado River. Leases inherited from BuRec run for 30 to 50 years. FWS has 19 concessions on 11 refuges; holders operate a variety of ventures including marinas, boat tours, boat ramps, boat sales and rental. FWS concessions run for 5 to 15 years.

BLM and FWS also issue permits that give the holder non-exclusive use of the land for such activities as rafting and hiking. BLM issues about 1800 Special Recreation Permits, mostly to river outfitters and upland guides. Permits are generally issued for up to five years and are subject to annual evaluation. In FY89, FWS issued 409 commercial special use permits at 40 refuges for activities including nature tours, photography and clam collecting.

The Forest Service and NPS regulate recreational activities differently from BLM and FWS. Although the Forest Service regulates all commercial activity through permits, permit holders may also be referred to as concessioners. There are 4,112 concessions in nine states, including some 2,800 outfitting and guiding services, 300 for picnic areas and 145 for ski resorts.

By contrast, NPS refers to all commercial recreational enterprises operating within the park system as concessions. However, concessions are divided between contractors, which are generally large operations with fixed assets, and permit holders, which are smaller-scale, mobile operations such as newspaper vendors and boat rental operations. NPS currently has 650 concessions in its parks: 192 contractors and 458 permit holders. Permits are generally issued for up to five years. Contracts normally have lasted for thirty years, but this may be limited to ten in pending concession reform legislation.

While federal policies have encouraged recreational use of the nation's public lands, they have not always ensured that commercial operators compensate the government fully for the privilege. Both Congress and the Administration have criticized the management of commercial activities by all agencies for failing to ensure that the government receives an equitable return.

- A 1991 GAO report, "Improvements Needed in Managing Concessioners," found that the government received about $35 million in fees from gross concession revenues of $1.4 billion representing approximately a 2% return to the government.[231]
- In 1992, a Department of the Interior Task Force found that "all agencies . . . generally have low and divergent

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[231] General Accounting Office, Report to the Chairman, Environment, Energy, and Natural Resources Subcommittee, Committee on Government Operations, House of Representatives, "Federal Lands: Improvements Needed in Managing Concessioners," GAO/RCED-91-163, June 1991.

franchise fees."[232] The report recommended that agencies increase competition for concessions by reducing the length of agreements to the shortest practical time, limiting the transfer or sale of concessions, advertising concessions and eliminating a preference favoring existing concessioners.

- A May 1994 Senate report concluded, "Each year, the federal government relinquishes the opportunity to collect hundreds of millions of dollars in rent and franchise fees from private firms who have the exclusive right to operate concessions on federal lands."[233]

WHAT ARE THE BENEFITS?

Fees

The absence of a standardized government-wide scale makes it difficult to assess whether the government is receiving an equitable return. A 1991 GAO report concluded that "total compensation to the federal government for the use of its recreational resources cannot be calculated because of incomplete financial data and non-fee considerations that are not reported."[234] As this discussion illustrates, there is ample opportunity for an operator to benefit through lack of agency expertise and knowledge in determining fair market value.

For example, the FWS leaves it to the local FWS refuge manager to determine the fair market value of the concession.[235] Although both fees and royalties may be charged, rates vary widely—as these examples from FY92 illustrate.

- At the Wichita Mountains concession in Oklahoma, Glenda Thomas apparently pays neither a fee nor a percentage of revenues, which totalled $54,804.[236]
- At Crab Orchard, Illinois, the Playport concession paid a fee of $500 plus royalties of $2,840 on revenues of $284,046.

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[232] Department of the Interior, "Report of the Concessions Management Task Force Regarding Commercial Recreational Activities on Federal Lands," April 17, 1992.

[233] "Federal Government Losing Millions by not Minding the Concessions Store," Investigative Staff Report of Senator William S. Cohen, Ranking Minority Member, Senate Subcommittee on Oversight of Government Management, Senate Government Affairs Committee, 103d Congress, 2d Session, May 16, 1994 (hereinafter cited as "Federal Government Losing Millions") at p. i.

[234] General Accounting Office, Report to the Chairman, Environment, Energy, and Natural Resources Subcommittee, Committee on Government Operations, House of Representatives, "Federal Lands: Improvements Needed in Managing Concessioners," GAO/RCED-91-163, June 1991.

[235] FWS anticipates adopting guidelines for establishing the fair market value of a concession.

[236] This concessioner operates a 99-site campground all year. Formerly, FWS purchased all supplies and the concessioner paid a 5% fee. FWS changed the contract so the concessioner buys all the supplies but pays no fee.

- At the National Key Deer Refuge in Florida, the Big Pine Lodge Concession paid a fee of $500 plus royalties of $11,388 on revenues of $113,880.

In FY92 the concessioners had gross receipts of $3 million and paid FWS $165,000 in annual fees and/or percentages of gross receipts. Unlike the Park Service, FWS may not accept maintenance, repairs or other payments in kind from concessioners.

Special use permittees using the refuge system pay a flat fee determined by the local manager, except in Alaska, where FWS has adopted a fee schedule. In FY89 the 409 commercial special use permit holders paid $40,000 in annual fees.

Like FWS, BLM also establishes concession fees at fair market rates, which generally range between 3% and 5% annually. However, fees from concessions inherited from BuRec pay only 2% of gross revenues annually. BLM has converted most leases from areas formerly managed by BuRec to BLM leases. Concession receipts in FY93 totalled $296,638. The only BLM concession to appear on GAO's list of 100 leading concessions by revenue was Havasu Springs, Arizona, with gross revenues of $3.4 million annually.[237]

BLM Special Recreation Permit holders pay the greater of either 3% of gross revenue or $70 per year. Although most holders are small operators, some river rafters and photographers can gross $1 million per year. In FY93 BLM collected $875,357 from permit fees.

The Forest Service also charges a flat fee of 3% of gross revenues for smaller operations, which yields approximately $2 million annually from outfitters and guides. However, the Forest Service uses a second, more complex system to calculate fees for 400 to 450 concessioners with higher revenues. These include 122 operating ski areas, which are the most lucrative concessions within the agency. The Graduated Fee Rate System (GFRS) for ski areas is unique to the Forest Service and involves the calculation of fees according to revenues and gross fixed assets. GFRS uses a progressive rate schedule that increases with sales; rates are adjusted according to the amount of capital invested in the facility by the permit holder. As the investment increases, adjustments are made according to the value of the assets. When mixed ownership is involved, rate adjustments are calculated according to lift capacity.

The GFRS has attracted considerable criticism in recent years for failing to ensure a fair market return for the government. In 1988, GAO found that privately owned ski areas on Forest Service land generated $737 million in gross sales but paid only $13.5 million in fees—a return to the government of 2.2%.[238]

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[237] General Accounting Office, Report to the Chairman, Environment, Energy, and Natural Resources Subcommittee, Committee on Government Operations, House of Representatives, "Federal Lands: Improvements Needed in Managing Concessioners," GAO/RCED-91-163, June 1991.

[238] General Accounting Office, Report to the Honorable Howard M. Metzenbaum, U.S. Senate, "Parks and Recreation: Problems With Fee System for Resorts Operating on Forest Service Lands," GAO/RCED-88-94, May 1988.

- A ski lift ticket at Heavenly Valley, California costs $42, of which the government receives 59 cents. Lift tickets at Snowbird, Utah cost $38, of which the government receives 66 cents.[239]
- The government receives 1.10% of sales at Mammoth Mountain/June Lake, California; 1.09% of sales at Sierra Ski Ranch, California; 1.08% of sales at Mount Reba, California; and 0.99% of sales at Wildcat Mountain, New Hampshire. By comparison, ski resorts on state lands in Vermont pay 5% of gross sales to the state.

GAO recommended that the Forest Service develop a new fee system for its ski resorts. The ski industry submitted its own proposal that, although considerably simpler, has not been adopted by Congress due to criticism that it could not give the government an equitable return.

The Forest Service is currently developing a new fee system based on appraisals of 13 ski areas sold in recent years. According to this survey, the Forest Service concluded that receipts from the GFRS reflected total fair market value required under law, but found that small ski operators paid too much, and large resorts too little. The new proposal also will exclude revenue from assets not based on Forest Service land.

NPS uses an entirely different system for calculating concession fees. However, it too has been the target of extensive criticism for failing to secure a fair market return. Although the agency has altered its practices, the government continues to receive minimal returns in some parks.

- Concessioners in Sequoia and Denali National Parks pay a 0.75% franchise fee, or $82,500 and $61,000 on receipts of $11 million and $8.5 million respectively. The Denali concessioner, ARA Outdoor World, LTD, also pays $8,500 for building use; together with the franchise fee this totals only 0.83% of total receipts.[240]
- In 1990 the Inspector General reported that an additional $16.7 million could be raised in additional concessioners' fees. The review also found that 28 out of the 29 NPS concessions contracts reviewed were awarded non-competitively.[241]
- According to the National Association of State Park Directors, the average rate of return for states' concessions operations is 10-15%. This compares to an average of 2.5% or less for concessions on federal land.[242]

Legislation to overhaul NPS concessions is currently pending in Congress.

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[239] "Federal Government Losing Millions" at p. ii.

[240] Ibid at p. 7 with additional information provided by the NPS.

[241] Office of Inspector General, U.S. Department of the Interior, Semiannual Report, October 1990.

[242] "Federal Government Losing Millions" at p. 10.

Currently, NPS charges concessioners franchise fees, which include a building use fee (if a federally-owned building is used) plus a percentage of receipts. These are determined through comparing the concessioner's profitability against the profitability of similar industries. Concessioners must operate around the industry median. Franchise fees range from 0% to 25%, with a 3% average. At some parks the operator pays NPS by performing maintenance or other in-kind services. GAO criticized this practice at Yellowstone, where the Inspector General found that the principal concessioner was buying revenue-raising items, such as vending machines and snowmobiles to rent to visitors, but receiving credit for payments in kind.[243] In FY91 concessioners' gross receipts totalled $518 million; NPS received franchise fees of $17 million with an additional $12 million through payments in kind.

Before 1981, operators received another benefit because NPS could only increase franchise fees with the approval of the concessioner. Unsurprisingly, few fees increased. Since 1981 increases have been at the discretion of the Secretary.

NPS concessions are also treated differently in that they are limited in the prices they may charge the public. A concessioner wishing to increase rates must obtain NPS approval. Gift shop concessioners are permitted a flat mark-up rate.

Commercial enterprises located outside NPS land but operating within the park benefit from NPS's commercial-use license system. Licenses are issued for a flat fee between $100 and $300 and deny the government any share in the business's revenue. Operators include bus companies, boat tours, cruise ships and outfitters.[244] An outfitter or guide operating under a commercial-use license on NPS land pays a flat fee while the same operator on Forest Service land pays 3% of gross revenues.[245]

Rapid growth in demand for recreation has prompted services regulated by commercial-use licenses to increase. In 1980, five thousand tour buses entered Yosemite; by 1993 the number had risen to 15,000. To limit numbers, NPS is now issuing letters of authorization. There are currently 1200 commercial-use licenses in effect and an unknown number of letters of authorization.

Competition and Preference

Although competitive bidding may not be practical for small commercial recreational activities, the practice is vital to ensure that the government secures a fair market return. The Department of the Interior Task Force on Concessions recommended improving competition in awarding concessions by

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[243] General Accounting Office, Testimony before the Environment, Energy, and Natural Resources, Subcommittee, Committee on Government Operations, House of Representatives, "Federal Land: Little Progress Made in Improving Oversight of Concessioners," GAP/T-RCED-93-42, May 27, 1993.

[244] Air and helicopter tours above the Grand Canyon generate no income for NPS since air space is controlled by the Federal Aviation Administration.

[245] General Accounting Office, Report to the Chairman, Environment, Energy and Natural Resources Subcommittee, Committee on Government Operations, House of Representatives, "Federal Lands: Improvements Needed in Managing Short-Term Concessioners," GAO/RCED-93-177, September 1993.

increased use of advertised sales, stipulating minimum requirements.[246] The use of preference, which gives the existing permit or concessions holder the right to match a successful rival bid, further reduces the opportunity for competition. According to GAO, preference "puts a chilling effect on attempts to add more competition to the contract award process."[247] Legislation currently pending before Congress is designed to improved competition for NPS concessions.

Agency bidding and preference policies vary widely. BLM generally issues special recreation permits non-competitively on a first-come, first-served basis. The agency limits recreational use on about 25% of rivers and in only one non-river area, the Aravaipa Canyon in Arizona. BLM divides permits for river use equally between private and commercial trips. Existing permit holders receive preference for renewal. If a permit lapses, BLM solicits applications and reviews health, safety and environmental questions in selecting a new permittee. On the other hand, BLM concessions are bid competitively.

In the refuge system, the local manager has broad discretion over the award of permits and concessioners. FWS concessions are bid competitively. The agency does not recognize any preference except in Alaska, where state residents have priority.

The Forest Service solicits applications for small-scale permits if there are competing operators. Since the fee scale is fixed at 3% of gross revenue, the agency selects permit holders based on ability to provide the service safely. Although ski resorts have multi-million dollar revenues, they are rarely bid competitively. Instead, the Forest Service leases them at a fixed fee to the provider of essential services such as ski lifts or lodges.

Formerly, there was little competition for concessions on NPS land and operators submitted bids below NPS requirements. In the absence of alternative bids, NPS was forced to negotiate terms. In October 1992, NPS concessioners lost the right of preference if they did not meet minimum NPS standards. Existing concessioners still have preference when concessions are renewed. However, pending legislation may eliminate preference except on operations that take in less than $500,000 annually.

NPS now solicits competitive bids through a prospectus that stipulates rates to be charged and the lowest fee acceptable. The prospectus also specifies additional criteria upon which the selection will be judged, e.g., maintenance responsibilities, interpretative initiatives. NPS evaluates bids on management capability, financial ability and willingness of the operator to do what is required. The franchise fee is only considered if all other factors are equal. NPS reported that bids have recently become more competitive, with litigation over even smaller concessions. Since October 5, 1992 NPS has advertised 14 concessions and received competing bids on nine. Bandelier National Monument in New Mexico has attracted seven offers and there have

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[246] Department of the Interior, "Report of the Concessions Management Task Force Regarding Commercial Recreational Activities on Federal Lands," April 17, 1992.

[247] General Accounting Office, Testimony before the Environment, Energy, and Natural Resources, Subcommittee, Committee on Government Operations, House of Representatives, "Federal Land: Little Progress Made in Improving Oversight of Concessioners," GAO/T-RCED-93-42, May 27, 1993.

been four for the concession at Lake Chelan National Recreation Area in Washington.

Inspection and Enforcement

All commercial activities on public lands are subject to regular agency evaluation to ensure the adequacy of safety, environmental and health standards. The agencies, however, lack the funds necessary to perform comprehensive reviews. In cases where reviews either are not carried out or are insufficient, the operator may receive a subsidy through reduced costs of compliance.

Possessory Interest

Unlike concessioners with other agencies, NPS concessioners have rights to an ownership interest in buildings they construct on federal land. The federal government must compensate the concessioner for this possessory interest when the concessioner relinquishes the concession. This constitutes an additional benefit to the concessioner because the capital cost is not depreciated. The total value of this subsidy may be as much as $2 billion.[248] Pending legislation would require depreciation of capital improvements over time. On Forest Service, FWS and BLM land, the concessioner must remove any improvements when the concession changes hands.

WHO GETS THE BENEFITS?

Beneficiaries of federal recreational policies range from family-run operations and non-profits to large, multinational corporations. The majority of commercial enterprises are small-scale operations; however, the government derives most revenue from larger concessions, particularly those on NPS and Forest Service lands. GAO calculated that the top one hundred concessions on federal land generated total revenues of $979 million in 1989. Yosemite led the list with $82.7 million, the Forest Service ski resort at Vail followed with $53.4 million. The Grand Canyon was third with $53.1 million.[249]

Large operations have drawn successful bids from corporations that have recognized the potential for profit. Some companies hold concessions in more than one park: ARA Services has concessions in nine parks, TW in seven, National Parks Concessions in five, and AMFAC in three. Ralston Purina Company owns the Colorado ski resorts of Breckenridge and Keystone ski resorts. Foreign companies may also own concessions; the Kamori Kando Company of Sapporo, Japan operates ski resorts at Heavenly Valley, California and Steamboat, Colorado.[250]

Not all ski resorts are, however, run by corporations. The towns of Ashland, Oregon and Denver and Leadville in Colorado all operate Forest Service ski resort concessions. Ashland took over a failing concession

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[248] "Federal Government Losing Millions" at p. 18.

[249] General Accounting Office, Report to the Chairman, Environment, Energy, and Natural Resources Subcommittee, Committee on Government Operations, House of Representatives, "Federal Lands: Improvements Needed in Managing Concessioners," GAO/RCED-91-163, June 1991.

[250] Information from "Federal Government Losing Millions."

because of its value to the community and has now turned it into a successful operation.

Smaller operators also derive significant benefits, which are usually realized when a business is sold. Although the permit itself may not be sold, it can be transferred or reassigned to the buyer. Provided the new operator is qualified, approval is automatic for most agencies. The value of operating on federal land is reflected in the price of the business. Thus, the first permit holder captures and later realizes the federal subsidy. Only NPS considers the price of the business in considering transfer of permits. The agency will not approve the transfer if the sale includes the value of the government's natural resource assets.

Although most BuRec concessions have been transferred to BLM, BuRec land is still used for recreation, most notably when land has been leased to a third party. In these instances, the third party captures the federal subsidy. For example, the City of Scottsdale, Arizona leased 760 acres of land for 75 years free of charge. The city, in turn, leased it to private commercial operators who developed an equestrian center, a theme park and a golf complex. The city receives a percentage of revenues, which totalled $1.5 million between 1988 and 1990. GAO identified at least three similar agreements signed by BuRec.[251]

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[251] General Accounting Office, Testimony before the Environment, Energy, and Natural Resources, Subcommittee, Committee on Government Operations, House of Representatives, "Federal Land: Little Progress Made in Improving Oversight of Concessioners," GAO/T-RCED-93-42, May 27, 1993.

DISCUSSION

This section discusses a number of the themes that arise across agencies and across programs. The first questions, how industries are subsidized and who is receiving which subsidy, arise in each program. Other issues, such as transferring and profiting from the subsidy, or compounding the subsidy through lack of environmental inspection and enforcement, apply to a limited range of programs.

HOW BENEFITS WORK

Federal policies support natural resource development in many different ways. Overlapping benefits go to each of the resource industries discussed in this report: minerals, water, power, timber, grazing and recreation. These industries receive benefits in a number of ways:

- Whether a "subsidy" is defined as providing resources at a price lower than fair market value, or at a price lower than the federal cost to provide it, the government sells almost all resources at a subsidized price. The major exceptions are some leasable and salable minerals, and some timber, that are sold in an active auction market.
- Other federal programs outside the natural resources area focus additional benefits on certain industries. Agriculture Department programs provide substantial benefits to users of federal irrigation water and grazing allotments. Mineral resource extractors receive the benefit of federal investments in mineral surveys and R&D.
- A wide range of resource users receive tax benefits as well, from the favorable tax treatment of mineral resources to the special provisions for oil and gas extractors to the exemption given publicly traded limited partnerships that derive their income from natural resources.
- In addition to these direct benefits, many resource industries receive the additional indirect benefit of lax enforcement of resource use conditions and production reporting requirements. This lax enforcement is compounded by statutory exemptions from various environmental laws.

Unfortunately, government policies on each of these issues are inconsistent. An examination of how each agency, and each program within each agency, handles these questions, demonstrates that federal policies have never been harmonized or reconciled. In part, these inconsistencies have resulted from each agency's attempts to manage the various programs enacted by Congress. In part, they are the result of agency efforts to do the most for their "customers" under each program, leading the "customers" to get a better deal than Congress ever intended.

OVERLAPPING BENEFITS

The overlapping benefits to each resource user group have developed by accretion. New federal programs to meet perceived needs form ever-growing layers of industry supports. Although overlapping programs within an agency are sometimes taken into account, there is rarely any consideration of interactions with the programs of other agencies. For example, the current debate over grazing reform has not considered the overlapping benefit from Farmers Home Administration loans. As a result, there is no overall structure to the range of federal supports given to any resource-based industry.

Since individual agencies are responsible only for their own separate programs supporting the resource users, they rarely have data regarding the extent of overlapping benefits. Committee staff inquiries requiring overlaps between programs found agency staff simply unable to provide the requested information. The agencies devote their budgets to carrying out their own programs, and spend no time on the other benefits received by the same resource users.

Thus, for example, the Bureau of Reclamation and the Bureau of Land Management have no idea which of their irrigators or cattle grazers also receive benefits from the Department of Agriculture. It may be assumed that all mineral operators take advantage of beneficial tax provisions, but which ones receive the greatest benefit from environmental law exemptions? Statistical data would allow the agencies to predict how many of the resources users also participate in other programs, yet such data cannot substitute for actual records of the benefits received by individual entities, which may be skewed by the size of the entities, the region, or other factors.

Although Farmers Home Administration loans may be reported as liens on the individual records of grazing allottees, no record of these benefits is kept at any level above the local office. Indeed, the reporting of these liens is an isolated example. Few resource agencies ask their beneficiaries for *any* information regarding the other federal programs in which they participate. It is therefore impossible to identify the recipients of multiple federal benefits without an exhaustive records search across agencies, the complexity of which is compounded by the use of multiple names or corporate shells to receive benefits from the various agencies.

Understanding the range of overlaps in resource users' benefits is essential to formulating and implementing federal natural resource policy. The simplest step toward overcoming gaps in the agencies' understanding of these overlaps is to require self-reporting by the resource users. Searching multiple agency records for beneficiaries with the same name or located at the same address is tremendously complicated—as some outside organizations have discovered when they have attempted to develop information regarding the extent of benefits received under the grazing or irrigation programs.[252] The most cost-effective alternative would be to add a list of other related federal benefits to the annual reporting requirements for each program. The self-reported list would have to include the related names and corporations

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[252] See the discussions above regarding the California Institute for Rural Studies' investigation of farming enterprises exceeding Reclamation acreage limits, and the National Wildlife Federation's investigation of multiple grazing allotments held by the largest ranching enterprises.

receiving benefits for use of the same resources—the same acre of land, head of cattle, or ton of coal.

Improved reporting requirements cannot alone provide a complete picture of overlapping supports for resource use. Agency databases are inadequate to the task of processing this data. In fact, some agency records, including a substantial proportion of the records on grazing allotments, have never been computerized. The agencies' computer systems need improvement and coordination to provide an overall picture of:

(1) Who receives the benefits?
(2) What benefits do they receive?
(3) Where do they receive the benefits (on which acre or river or for which ton of minerals)?
(4) What do those benefits help to produce?

The land management agencies have already begun an effort to coordinate geographic information databases for ecosystem management and other purposes. Similar efforts should be undertaken to coordinate agency databases that track the recipients of natural resource development benefits.

In the past, federal resource managers have often proven unequal to the job of coordinating massive amounts of computerized data. The Agriculture Department has recently expressed interest in buying back some of its own data in improved formats from the Environmental Working Group, which obtained the Department's subsidy program data through the Freedom of Information Act, then reprogrammed it into more useful formats on the private group's own computers.

The Administration's recent efforts to encourage improved data management and to develop the Information Superhighway, however, should contribute to improved agency coordination of overlapping databases. Developing common data structures should assume a high priority for the resources agencies as they move into a more computer-literate era. Recent proposals to streamline procurement procedures may also contribute to developing these improved data management systems; the private database mentioned above was devised using flexible, off-the-shelf hardware and software.

SUBSIDIES AS CASH COWS

Federal natural resource programs generally involve a series of benefits and subsidies for the use of natural resources, as an incentive to make the use of the resources more economic or profitable. The type of benefits supporting development of the resource vary: royalty forgiveness, low interest loans, low prices on resources. None of these involves direct cash payments, and none is intended to provide direct cash profits to those who do not make use of the resource.

A number of practices have arisen, however, that allow individuals to take subsidies as cash, without themselves using the resource in the manner intended. These practices include: reselling the right or privilege to use the resource at a higher price to another resource user; keeping the increased value of private lands associated with the resource benefit; and sometimes selling the right to use the resource back to the government at a profit. In each case, the benefit retained by the original party provides a cash profit at a cost to the government, either in direct payments or revenue foregone.

Agency practices that tend to increase the cash value of the subsidy may also increase the incentive to resell it, in addition to providing greater profit to the original party.

Most of the federal benefits discussed in this report can be subleased or transferred to other users. The policies governing these transfers, however, vary from agency to agency. For example, the Bureau of Land Management allows subleasing of grazing permits, whereas the Forest Service does not. No resale is allowed outside the designated service area for Reclamation water, except under special terms provided by statute for the Central Valley Project in California.[25]

In almost all cases where transfers are allowed, the agencies retain some sort of approval right over transferees, but rarely exert control over the price charged for resale of the government benefit. For example, the Bureau of Land Management reviews transfers of oil and gas leases only to ensure that the transferee meets purchaser qualifications and deposits an adequate bond. The National Park Service is the only agency issuing recreation permits that examines the price paid for permit transfers and prohibits the retention of excess profits.

Landowners whose property values increase due to the availability of federal benefits also capture the cash value of their subsidies. When a farmer's land increases in value due to its eligibility for irrigation water, or a rancher's property value goes up due to its historic ties to a grazing allotment, that farmer or rancher can take the value of the subsidy in cash by selling the land at its new market price.[254]

Government buy-backs of subsidies are perhaps the most extreme example of the beneficiary converting federal resource policies directly into cash from the taxpayers. BLM's purchase of mining claims at Yucca Mountain, the repurchase of rights to BuRec's own water from the Harquahala Valley Irrigation District, and DOE's ransom of federal grazing rights at private market rates all seem to provide overly generous benefits. A related problem arises when patented land is transferred back to the government through a profitable land exchange, as occurred recently in the Elk Creek Wilderness. In each case, policies that were meant to provide a positive benefit for resource developers have come to provide a significant cash profit for those who have not actually used the resource.

The ability to convert resource development policies into cash does not generally serve the original federal interest in supporting natural resource development. Instead, it provides cash from the taxpayers to individuals no longer using the resource. Natural resource programs should be re-evaluated to determine how to protect the Treasury from such raids.

Several resource management policies contribute to the cash conversion of resource subsidies. First, of course, is the practice of allowing for-profit subleasing or reselling of federal resources. If a grazing permit or recreation permit is resold at a higher price, the difference in price establishes in most

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[253] At least one irrigation district has ignored the restriction on transfers and profited directly from resale of Reclamation water on the Umatilla Project in Oregon.

[254] A farm or ranch retained in ownership for through at least one owner's lifetime receives even greater federal benefits, as the increased land value gives the heirs a higher tax basis in the land. The heirs will then avoid income taxation on its increased value if they exercise the option of cashing out the federal benefit by selling the land.

cases that the original sale did not recover fair market value. Although the government may reasonably wish to allow transfers when the original purchaser or permittee cannot or will not carry out the resource use, some limit on the profit would be appropriate. The government might reserve the right to a portion of the profit. Such a policy was codified into the Reclamation water transfer provision of the Central Valley Project Improvement Act, which imposes higher charges on transferred irrigation water.

In addition, certain sale practices affect the government's original receipt of fair market value, and thus the potential for speculators to reap cash profit off the top. Sealed bidding systems and more accurate appraisals contribute to the government's recovery of fair market value. Some minimum degree of competition might also be necessary. Non-competitive oil and gas lease sales reaped windfall profits for the lessees; so may excess profits result when only a single purchaser bids on a timber sale. Where bidding is impossible, as where a grazing permit is granted to someone owning nearby ranch land, or where a ski resort special use permit usually is issued to the owner of private lift and lodge facilities, other safeguards should be developed to recover a reasonable return to the government.

Finally, resource sale and lease policies should be reviewed to ensure that the federal government will not find itself buying back its own property at a significantly higher price. Patenting mine lands under the 1872 Mining Law has resulted in many of these buy-backs. Reform of the Mining Law may limit future buy-backs by bringing that statute in line with the FLPMA principle that federal lands should be retained in public ownership, but other programs also deserve review to ensure that buy-backs are minimized. Agencies should craft the terms of sale or lease of other resources to ensure that the government's right to re-enter or re-purchase the resource is protected where necessary.

VALUING A NATURAL RESOURCE

Determining the value of a natural resource may prove one of the most difficult tasks in developing natural resource policy. It arises when the permit to use the resource is resold, or when the setting of fees is based on the value of the resource, as with Forest Service ski area permits. The problem of valuation raises the question: how do you set a value on the separate contributions to a single item that is jointly created and owned?

For example, the Forest Service attempts to determine the value of the federal land used for a ski resort when it sets the price for the resort's special use permit. In general, the permittee owns most of the physical facilities, and often some land at the bottom of the mountain, but the Forest Service owns the mountain itself. Without the mountain, the ski resort would have little if any value, yet the physical facilities owned by the permittee are essential to the ski resort as well. The Forest Service's solution to the valuation problem is to examine free market sales of the ski resorts. After subtracting the known value of all the physical assets, the remaining value is assigned to the mountain itself. This procedure assigns the least possible value to the federal

land, as it ignores the mountain's contribution to the value of the physical fixtures.[255]

The Park Service also makes an effort to assess the value of federal resources when it reviews transfers of recreation permits. Again, the agency attempts to calculate the value of the business assets transferred in the sale of a business. In this case, the agency will disapprove the permit transfer if it believes that the value of the federal resource was included in the sale price for the business. However, as mentioned above, the Park Service is the only resource agency that tries to prevent sales of the value of the federal resource itself.

A similar situation could arise if the agencies attempted to review the terms of grazing permit transfers. (Currently, the Forest Service does not allow subleasing, while BLM does, without reviewing the price.) Grazing allotments are often intricately interspersed with private lands. The public and private land together form a single ranching operation, and either area without the other would be significantly less valuable for grazing. BLM would find it quite difficult to distinguish the value of the federal land from the value of the private land when the private land is sold.

The question of setting a value on federal resources should be addressed on a government-wide level. Although the problem is difficult, the solution is not to rely on ad hoc analysis by each resource agency. A consistent methodology for distinguishing public from private value is necessary to any effort to ensure an adequate return on the value of public resources.

THE SUBSIDY CUSHION

Several factors may allow commercial operations to acquire federal benefits beyond the intent of the original resource programs. Agency interpretation of the law may allow resource users to exceed statutory limits on receipt of federal subsidies. Lax inspection and enforcement may not only exaggerate this effect, but also allow theft of resources or violation of environmental protections. A related problem arises when explicit exemptions from environmental laws grant excessive benefits to certain resource user groups.

Resource users may exceed federal benefit limits in several different programs. Historically, compliance with acreage limits on the size of farms receiving Reclamation water has been abysmal in some regions. Loopholes to evade acreage limits may be compounded by the evasion of dollar-figure caps on Department of Agriculture program payments. In the acquisition of energy resources, oil and gas companies have avoided acreage limits for oil and gas leases by entering into "development contracts" with BLM, and coal companies have extended the limits on their lease terms through "logical mining units." Timber companies have similarly obtained extensions on time limits to complete their timber harvests.

Each of these extensions or evasions of limits on federal benefits undercuts the overall structure and purposes of the natural resource programs. A systematic review of the these practices should reinforce the agencies'

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[255] Although proposed Forest Service procedures may avoid reviewing the value of associated businesses (hotels, restaurants, etc.) located off federal land, this will not alter the fundamental problem of determining the value of the ski slopes themselves.

administrative discretion to close loopholes and eliminate special extensions for groups of resource users.

Inadequate agency inspection and enforcement may allow some resource users to stretch their authorized subsidies into direct violations of law or regulation. Without sufficient enforcement, the government fails to collect royalties on oil and gas leases or payments for timber harvested. In addition, the resource users may benefit by violating environmental conditions—putting too many cattle on a grazing allotment, or inadequately plugging oil and gas wells.

The resource agencies should re-examine their program budgets to determine whether they have devoted adequate funding to inspection and enforcement. In addition, agencies can adopt practices that make enforcement easier. For example, by eliminating "scaled" timber sales the Forest Service can simplify enforcement of timber sale conditions and avoid some kinds of timber theft. MMS could reduce the temptation for oil and gas companies to persistently under-report production by imposing substantial fines when violations are found.

Exemptions from environmental laws do not involve violations of statute, but rather direct legislative actions to remove burdens from particular industries. Sometimes, however, the results have been too generous or environmentally destructive. For example, the exemption of all oil and gas production wastes from the Resource Conservation and Recovery Act may be excessively broad, since the most toxic fraction of those wastes might be regulated without unduly burdening the industry. The Clean Water Act exemption for irrigation drainage may prove quite environmentally costly; the Fish and Wildlife Service has found that this unregulated pollution has had serious impacts on water quality, as well as on fish and wildlife. With these examples in mind, the full array of environmental exemptions for natural resource users should be re-examined to determine whether each meets current public policy goals.

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CONCLUSION

With the expansion of the United States in the nineteenth century, the government viewed settlement of the isolated and unpopulated West as an important priority for the young country. Natural resource development policies played an important role in promoting settlement. In 1872, Congressman Aaron Sargent described the purpose of the proposed Mining Law:

> We are inducing miners to purchase their claims, so that large amounts of money are thereby brought into the Treasury of the United States, causing the miners to settle themselves permanently, to improve and establish homes, to go down deeper in the earth, to dig further in the hills, and in every way to improve their own condition and to build the communities and States where they reside.[256]

Federal water, grazing and timber policies provided additional mechanisms for encouraging settlement and supporting permanent communities.

These settlement policies proved successful, and the West today contrasts vividly with the region first acquired by the United States. The West is now the fastest growing and most urbanized area of the country. Since 1945, metropolitan areas have expanded rapidly and the populations of Phoenix, Denver, Salt Lake City and Las Vegas have grown more swiftly than those of eastern cities. Recently, rural regions of the West have begun to experience similar dramatic growth. The Department of Agriculture estimates that if current trends continue, rural areas in the region will gain 800,000 people by the year 2000.[257]

Although government initiatives to promote settlement met their purposes long ago, mining, water, grazing and timber policies continue as anachronisms in a changed society. Homesteading and railroad grants are faded memories, but the 1872 Mining Law still permits land to pass out of public ownership into private hands through the patenting process. Today, however, patent applicants are more likely to be large mining companies than the individuals envisaged in 1872.

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[256] Mineral Exploration and Development Act of 1993, H.R. Rpt. No. 103-338, 103d Congress, 1st Session, November 9, 1993.

[257] Demographic information from the Economic Research Service of the Department of Agriculture, which considered population changes according to rural and urban areas in each time zone. This data is for the Mountain Time zone—the states of Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah and Wyoming. "The Changing Needs of the West," Hearing before the Committee on Natural Resources, Salt Lake City, Utah, 103d Congress, 2d Session Serial No. 103-80, April 7, 1994 (statement of John Cromartie, Economic Research Service, U.S. Department of Agriculture).

Federal natural resource policies have all contributed to development of the West. But rapid population growth is changing the character of the region. Demand for recreation has created new pressures on public land, and wilderness and park lands set aside by the government from settlement are now under threat. Natural resource policies have also contributed to the changing character of the West by supporting operators regardless of size. Originally developed to assist small, family-run businesses that represented the traditional Western way of life, federal assistance now benefits large landholders, agribusinesses and multinational corporations as well.

The nation must reevaluate its public resource policies and the goals they serve. All branches of the government must be involved. The agencies should collect data about existing policies and improve communication so that overlaps and contradictions within these policies can be identified. With this data from the executive branch, Congress can then set new natural resource policy goals, and approve implementing legislation. The Congressional Budget Office, the General Accounting Office, the Office of Technology Assessment and the Inspectors General should all assist in the process.

In reviewing federal resource policies, the nation must recognize that many subsidies serve valuable public policy purposes. They provide the country with important domestic energy sources and promote industrial activity that contributes to the country's economic health. Natural resource industries employ many Americans and foster expertise that has enabled many U.S. companies to expand overseas and become players in the world economy. The nation's wealth of natural resources has contributed to its standing as a world power.

The contribution of natural resource subsidies to these economic gains has not always been acknowledged. For example, the American Barrick mining company has created jobs and contributed to the local economies of several Western states, but at some cost to the federal taxpayer. American Barrick did not, however, acknowledge the federal role in accounting for its success in the company's 1993 annual report,

> Throughout its first decade [American Barrick] has pursued its founding goal: to create wealth for its shareholders by focussing on the gold business and restricting its operations to North America. This goal has been accomplished through entrepreneurial management, conservative financial strategies, efficient mining operations, and a clear focus on profitability.

This profitability contributes much to the American economy, but it also owes much to the support provided by the American taxpayer.

The country must review continually the value of the assistance it provides commercial activities and consider whether these subsidies are merely underwriting activities that would occur anyway. Future debate must reevaluate goals, and consider whether the present pattern of multiple and overlapping subsidies serves the public interest. The combined effect of these subsidies has often gone unnoticed. Taking again the example of American Barrick, the company recently acquired title to 1,949 acres of land in Nevada where it plans to mine for gold reserves worth an estimated $10 billion. The company, which paid only $5 an acre for the land, will pay no royalty on the mineral. It will extract the gold using in part the cyanide heap leach technology pioneered by the Bureau of Mines, it will receive favorable

treatment under the tax code, and it will be exempt from major environmental legislation.

One of the important decisions to be made in this policy reevaluation is who should receive federal assistance. Throughout this report, committee staff has attempted to identify the beneficiaries of each policy. Although this effort was hampered by inadequate information, it is clear that recipients vary widely. Mining is likely to be dominated by big corporations with the resources necessary to pursue a costly mining venture. Oil and gas operators range from major oil companies down to small, wildcat operations. Providers of recreation services range from the Ralston Purina Corporation, which runs a ski resort, to individuals who provide guide services.

As this report has described, most natural resource subsidies benefit all operators, regardless of need.[258] There is no onus on the recipient to demonstrate need, and the government never checks whether a need exists. Instead, most operators take the federal subsidy for granted. The government must perform a comprehensive survey to ascertain who is receiving benefits and then decide whether it is appropriate that all should be subsidized. This would bring federal natural resource policies into line with existing government programs that acknowledge the value of targeting federal assistance. For example, Congress has already recognized the special needs of small businesses, exempting them from worker safety laws and environmental statutes.

This report makes no specific recommendations for how subsidies should be targeted. Certain strategies could be adapted, however, from other existing programs.

- Subsidies might be given only on the basis of demonstrated need for the subsidy. If development of a "needs" test proves too difficult, a similar result could be reached through taxation of the subsidies—giving a reduced benefit to those who lie in a higher tax bracket.
- Qualification for subsidies could depend upon the recipient fulfilling other public policy goals. For example, mining companies might have to establish a strong environmental reclamation record, or take other steps to mitigate their actions. These elements are already included in recent revisions to certain Reclamation water projects, where water users are required to adopt water conservation measures and establish fish and wildlife mitigation funds, and in the 1992 Energy Policy Act's requirements that customers of the Western Area Power Administration take steps to control power demand.
- Future allocation of natural resource subsidies might address the recent Executive Order on environmental justice, which requires agencies to take equity issues into consideration in formulating policy. The inequitable distribution of polluting industries in minority

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[258] The major exception to this policy is the acreage limit on receipt of Reclamation water, which is intended to limit the benefit to family farmers. Unfortunately, large agribusinesses continue to find loopholes to take advantage of the subsidy.

neighborhoods might be ameliorated in part by limitations on the distribution of federal subsidies to these industries.

A review of federal natural resource subsidies should examine the impact of subsidies and related benefits upon the state and private market sectors as well. Federal resources are not the only resources available in most areas of the country. Although federal public lands occupy a significant proportion of many western states, each of these states also contains substantial state and private lands. The states and private parties often sell or lease resources in exactly the same areas where the federal resources are used. In fact, federal holdings are often located in a "checkerboard" pattern with state and private holdings because historic land grants offered only alternating sections of land to the states or railroads.

With this close association of lands, it is not surprising that subsidized pricing and other supports for industries using federal resources may affect the terms of resource use on state and private lands as well. Jim Baca, the former Director of the Bureau of Land Management, often recounts his previous experiences as Land Commissioner for the State of New Mexico. Although he was legally required to recover fair market value for state resources, he found himself competing with federal grazing and mine lands where resources were heavily subsidized. The federal resource policies tended to lower market prices for everyone, interfering with Mr. Baca's ability to meet his legal duty to generate funding for state schools.[259] This problem of federal competition with the states warrants further examination.

In some situations, the federal subsidies for natural resources do not prevent sales at higher rates on neighboring land. Irrigation water from the State Water Project in California sells at $100 to $200 per acre-foot despite the fact that water from the nearby federal Central Valley Project may cost less than one-tenth as much. The Gold Quarry Mine in Nevada is located on both private and federal property; the operator, Newmont Mining, pays 16% in royalties to at least one private owner but pays nothing for gold mined from the federal land. The existence of sales at much higher prices by neighboring owners indicates that federal prices should be higher, and that the resource industries can afford to pay them.

Any review of federal natural resource policy must also endeavor to introduce a concept that has long been ignored: *consistency*. At a legislative and administrative level, federal resource programs form a hodge-podge of overlapping, inconsistent, and sometimes contradictory features. Reconciling these features into a coherent whole will require substantial modification of individual programs, informed by the public policy goals discussed above.

This report has described throughout the array of inconsistent and overlapping programs, which vary from resource to resource and agency to agency without apparent reason. The contradictory nature of some of these programs warrants further notice.

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[259] In a newspaper letter to the editor in Salt Lake City, a private land rancher recently reported a similar problem. "Subsidizing Public Ranchers," *The Salt Lake Tribune*, Commentary page, June 27, 1994 (letter from Ron Raunikar).

- USDA's acreage reduction programs attempt to reduce production of surplus crops, while the Reclamation program subsidizes production of the very same crops.
- The 1872 Mining Law sets no environmental reclamation standards for mines, while the NPS carefully protects the recreational visitor's experience within view of the mine sites.
- The nation spends billions to reduce pollution of the waterways by nutrients from sewage treatment plants, while the Clean Water Act exempts irrigation drainage outlets from regulation of the same pollutants.

Eliminating these contradictions is absolutely necessary to any reform of natural resource policy.

Consistency in federal policy also requires the development of standards across a broad array of resource issues. The FLPMA concept of recovering fair market value for federal resources should be applied more consistently, and carried over into other programs. As stated in the Administration's recent "National Performance Review":

> The federal government should institute policies which guarantee fair return for the commercial sale or use of mineral, renewable and other natural resources.[260]

Federal policy should move toward charging fair market value for all resources, unless in doing so it conflicts with another clearly articulated policy. If subsidies are warranted for certain sectors of the economy, common standards should be developed to identify and provide benefits to those sectors. Other consistent standards are necessary to establish when and how and at what price permits or contractual rights to resources may be transferred among users.

Further, less obvious problems arise in the development of consistent and coherent resource policies. The exchange of information within and among federal agencies must be improved significantly. Information collection and compatible databases are necessary to understanding what benefits are provided to whom. In addition, better communication between budgeting and program offices—revenue-spenders and revenue-raisers—would enhance the implementation of consistent policy goals.

Although this report has not explored the impact of budget incentives on agencies' resource sale policies, a review of federal resource policy will also have to examine that impact. Budget incentives should be adjusted so that agency managers are not tempted to set aside other resource goals in order to obtain additional budget dollars. For example, Forest Service managers have strong incentives to sell timber, even at below-cost prices, because statutory provisions allow them to use part of the income from the sales for other forest work in the same areas. In addition, the congressional budget scoring system gives credit for receipts from sales of certain resources, with

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[260] Office of the Vice President, "Creating a Government That Works Better and Costs Less: Department of the Interior," Accompanying Report of the National Performance Review, September 1993, at p. 21.

no offset for the future liability for related environmental degradation, even if the resources are sold at below-market or below-cost prices. Conserving resources receives no credit. The impact of federal policies on local budgets must also be addressed, since many rural communities in the West depend heavily upon receipt of a portion of the fees paid for federal resources.

Perhaps the best place to begin a review of federal natural resource policy is where this report began: with an inventory of the many federal programs supporting development of the nation's natural resources. The challenge for federal agencies is to take the work started here and expand it—agency staffs have a broader understanding of the range of their own programs and how they interact with other influences on natural resource industries. Once the government can assess where it stands currently in supporting natural resource development, it can move on to develop the new natural resource policies of the twenty-first century.

APPENDIX

COMMITTEE ON NATURAL RESOURCES PUBLICATIONS REFERENCED IN REPORT

- "Legislation to Reform the Federal Onshore Oil and Gas Program," Hearing before the Subcommittee on Mining and Natural Resources, Committee on Interior and Insular Affairs, U.S. House of Representatives, 100th Congress, 1st Session, Serial No. 100-11, July 28, 1987.

- "Department of the Interior's Efforts to Estimate the Cost of Federal Irrigation Subsidies: a Record of Deceit." Subcommittee on Oversight and Investigations, Committee on Interior and Insular Affairs, U.S. House of Representatives, 100th Congress, 2d Session, Committee Print No. 9, December 1988.

- "Amending the Alaska National Interest Lands Conservation Act, to Designate Certain Lands in the Tongass National Forest as Wilderness, and for Other Purposes," Committee on Interior and Insular Affairs, U.S. House of Representatives, 101st Congress, 1st Session, H.R. Rpt. No. 101-84, Part I, June 13, 1989.

- "Federal Minerals Royalty Management; An Analysis of Problems Related to the Department of the Interior's Minerals Management Service with Recommended Solutions," Staff Report, Committee on Interior and Insular Affairs, U.S. House of Representatives with the assistance of the General Accounting Office Staff, 102d Congress, 2d Session, Committee Print No. 8, March 1992.

- "Deep Pockets: Taxpayer Liability for Environmental Contamination," Majority Staff Report, Subcommittee on Oversight and Investigations, Committee on Natural Resources, U.S. House of Representatives, 103d Congress, 1st Session, Committee Print No. 2, July 1993.

- "Mineral Exploration & Development Act of 1993," Report together with Supplemental, Additional, and Dissenting Views, Committee on Natural Resources, U.S. House of Representatives, 103d Congress, 1st Session, H.R. Rpt. No. 103-338, November 9, 1993.

- "Central Arizona Project," Oversight Hearing before the Subcommittee on Oversight and Investigations, Committee on Natural Resources, U.S. House of Representatives, 103d Congress, 1st Session, Serial No. 103-64, December 10, 1993.

- "BPA at a Crossroads," Majority Staff Report, Task Force on the Bonneville Power Administration, Committee on Natural Resources, U.S. House of Representatives, 103d Congress, 2d Session, Committee Print No. 7, May 1994.

- "Western Area Power Administration Power Allocation," Hearing before the Subcommittee on Oversight and Investigations, Committee on Natural Resources, U.S. House of Representatives, 103d Congress, 2d Session, Serial No. 103–95, June 16, 1994.

- "Water Use Practices on Bureau of Reclamation Projects," Hearing before the Subcommittee on Oversight and Investigations, Committee on Natural Resources, U.S. House of Representatives, 103d Congress, 2d Session, Serial No. 103–101, July 19, 1994.

- "The Changing Needs of the West," Hearing before the Committee on Natural Resources, U.S. House of Representatives, 103d Congress, 2d Session, Serial No. 103–80, April 7, 1994.

MINES THAT EMPLOY MORE THAN 100 PEOPLE ON FOREST SERVICE LAND

Information Provided by *Randol Mining Directory, 1993/94.*

Mine Site	Minerals Mined	Owners
REGION 1:		
Stillwater Mine (MT)	Pd, Pt, Cu, Ni, Au	Stillwater Mining Co., JV (Pittsburg and Midway Coal Mining Company, subsidiary of Chevron Resources Co.) (50%) Manville Corporation (50%)
Beal Mountain Mine (MT)	Au, Ag	Pegasus Gold (100%) Silver Seal, Inc. (6% net profit interest to payback, then 30% net profit interest through subsidiary)
REGION 2:		
Climax Molybdenum Mine (CO)	Mo	AMAX (100%)
Henderson Mine (CO)	Mo	AMAX (100%)
Gilt Edge Mine (SD)	Au, Ag	Wharf Resources Ltd. (60%) MinVen Gold Corp. (40%)
Gilt Edge Mine (MT)	Au	Blue Range Mining Company, LP (100%)
REGION 3:		
Tyrone Branch Mine (NM)	Cu	Phelps Dodge Corporation (100%)
Morenci Mine (AZ)	Cu, Mo	Phelps Dodge Corporation (85%) Sumitomo Metal Mining & Sumitomo Corporation (15%)
Miami Mine & Smelter (AZ)	Cu, Ag	Cyprus Copper Company (100%)

Mine Site	Minerals Mined	Owners
REGION 4:		
Black Pine Mine (ID)	Au	Pegasus Gold Inc. (100%)
Thompson Creek Mine (ID)	Mo	Cyprus Copper Company (100%)
Stibnite Mine (ID)	Au, Ag	MinVen Gold Corp. (100%)
Jerritt Canyon Mine (NV)	Au	Independence Mining Company, Inc. (70%) FMC Gold Company (30%)
Grouse Creek Project (ID)	Au, Ag	Hecla Mining Company (100%)
REGION 5:		
No official name provided (CA)	Limestone	Pluess-Stauffer (100%)
No official name provided (CA)	Limestone	Phizer (100%)
No official name provided (CA)	Limestone	Mitsubishi Cement (100%)
REGION 6:		
Kettle River Project (WA)	Au	Echo Bay Mines Ltd. (70% Crown Resources Corporation (30%)

MINE OPERATIONS IN THE UNITED STATES

Information Provided by:
Mine Safety & Health Administration
U.S. Department of Labor

Size of Mine (Number of Employees)	Number of Coal Mines	Number of Metal & Non-Metal Mines
1–4	914	5422
5–9	642	2645
10–19	774	1662
20–34	582	720
35–49	269	244
50–99	228	237
100–149	81	132
150–249	89	82
OVER 249	86	70
TOTAL	3,665	11,214

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